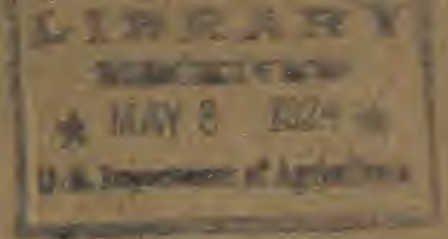


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JEWELL NURSERY CO.
LAKE CITY, MINN.



This is the official Trade-Mark and slogan of The American Association of Nurserymen. That Association includes most of the leading nurserymen of the United States and it is an organization that stands for the highest ideals of business integrity in the growing and selling of nursery stock. As an organization, it recognizes the fact that there are some unscrupulous dealers in nursery products whose practices injure planters and therefore the whole nursery trade, and the Association has entered on a practical program to correct the conditions. This program comprises a widely published invitation to all purchasers of nursery stock to report to its Vigilance Committee any violation of honest dealing, through which the Association will exercise every effort to correct the abuses.

The Jewell Nursery Company is one of the oldest members of the Association. It is in hearty accord with this effort to protect the buying public and to eliminate all practice in the growing and selling of our products that may cause planters loss and disappointment and thus tend to throw discredit on the trade as a whole. In this we desire the assistance of all persons who sell over our name to bring these facts before our customers and prospective customers, and to cooperate with us in a rigid adherence to the business ideals of the Association. In doing so you will be performing a service to the public, to yourself, to us and to the nursery trade in general. It should be distinctly understood, in calling the attention of the public to this matter, that the Association does not assume any financial responsibility for the acts either of its members or of those who are not members. Legally it can only offer its Vigilance Committee as a clearing house for grievances thus giving the Association an opportunity to bring its weight to bear in the most effective way possible to secure for buyers fair and honest treatment.

THE JEWELL NURSERY COMPANY
LAKE CITY, MINNESOTA



An excellent example of foundation planting. Because our shrubs are full of vitality, hardy, and suited to the severe climatic conditions in this section, within a very short time you can enjoy similar plantings. Why risk disappointment with unacclimated or inferior stock when ours may be had at no greater cost?

PLANTER'S GUIDE



WE SUBMIT this condensed catalog for the information and guide of our many friends throughout the Northwest. The list contained in this catalog is limited to those varieties best known, longest planted and most in demand. Many varieties which are not now greatly planted have been omitted, as well as a number of late introductions which have not yet been sufficiently tested to warrant us recommending them. This list may therefore be considered as a safe guide for the average planter throughout the Northwest.

As there is a considerable variance in the hardiness of the different varieties, we have indicated by the use of four letters, A, B, C, and D, the relative hardiness of each and the particular section it is best adapted to.

A—All semi-arid sections such as Central and Western North Dakota, Wyoming, Montana, Western Nebraska and Northern Colorado.

B—Northern Minnesota, Eastern Dakotas and Northern Wisconsin.

C—Central Minnesota and Central Wisconsin.

D—Southern Minnesota, Northern Iowa and Southern Wisconsin.

We have also attempted in brief to present a general instruction of planting and general care of trees, which we hope will be of benefit to our patrons.

THE JEWELL NURSERY COMPANY, LAKE CITY, MINNESOTA





A Minnesota farm Apple orchard, all Jewell trees, that has been profitably fruiting for many years.

The Planting and Care of Trees, Shrubs and Plants

Plant Deep. The first, and in our estimation, the most important rule to keep in mind when planting a tree is to plant it deep in the soil where the roots will be safe from summer droughts. The most critical period in a tree's life is its first summer. The shock of transplanting places it in a condition, where it is more easily affected by outside conditions. Fully fifty per cent of the failures are direct results of drying out the **first** season.

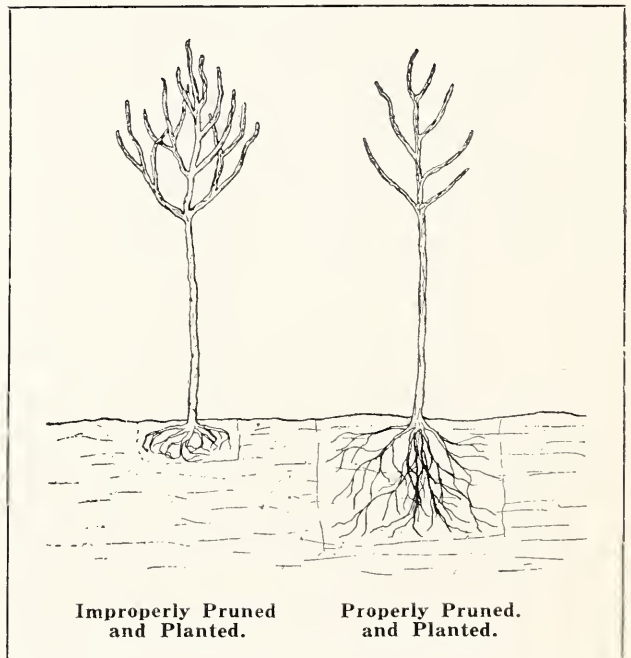
How Deep? The following general rule is followed in our nursery work and we believe is a safe guide for northwestern planters. Except on naturally **heavy or wet soil**, we transplant all trees, 5 to 6 feet high and over, **12 inches** deeper than they originally stood in the nursery row; this includes all fruit and ornamental trees and large evergreens. Trees under that size, shrubs and small evergreens are planted **4 inches** deeper.

The Surface after Planting. It is a common mistake to plant a tree and then mound up the surplus dirt around it. The tree should be set so that it will be in the center of a basin, the center of which is six inches lower than the surrounding level, which will gather the moisture towards the roots. To do this, do not try to put all the dirt back, but throw away enough of the surplus so as to leave the required basin, which gathers the moisture.

How to Plant Trees and Shrubs. First: Trim off all bruised or broken roots, leaving a freshly cut surface. Second: Make a puddle of **thick mud**, either in a hole dug in some convenient place, or in a tight box or half-barrel; before planting dip the roots in this mud. Third: A hole for the tree having been dug, sift fine rich dirt among the roots, just enough to cover, so the boot will not injure them. **Stamp the earth down until it is solid**, then fill in a little more dirt and repeat the stamping until the hole is nearly full, then fill the rest of the hole with loose dirt and leave it pitching toward the tree from all directions. **If it is properly set you can't pull it up.**

When to Plant. Season: In Minnesota and similar latitudes it is generally recommended to "trench in" most kinds of stock when same is received in the fall of the year, thus safely keeping it over winter for early spring planting. The hardy plums, native shade trees and small fruits may be here successfully transplanted in the fall. Weather: A cloudy day when the wind is not strong is the best weather to plant nursery stock, and such days are frequent in April and May. If stock is received on a dry, hot or windy day, open bundles, wet down the roots thoroughly and trench in a shady place or put in cellar until weather is favorable.

Trimming. As soon as the tree is planted trim out all the unnecessary branches and also cut off





The beauty of the home grounds is greatly enhanced by well placed groups of trees and shrubs. This illustration shows an attractive arrangement.

about one-half of those that are allowed to remain on the tree. This is done to throw the first growth of the tree into the establishment of roots and not let it expend its energies in a lot of useless branches. This trimming done, the top of the tree will grow with much greater vigor the succeeding year. It is also a good thing to trim off about one-half inch from the ends of the principal roots just before the tree is planted. This presents a freshly cut surface to the soil and greatly aids the process of starting new roots.

Fall Shipments. It is now generally conceded by tree planters that a delivery of nursery stock in the fall is just as desirable as a spring delivery, and many of our customers prefer to have their stock shipped in the fall as there is an advantage in having the trees on hand in the spring so that they may be planted when the weather and ground are in just the right condition. Not only that, but the buyer seldom fails to get the exact assortment of varieties desired in autumn orders. All hardy Minnesota grown trees, shrubs and plants are easily kept over winter if buried properly. Below we give complete directions for doing this, and if these are carefully followed the trees will be found in the spring as bright and healthy and full of sap as when dug from the nursery.

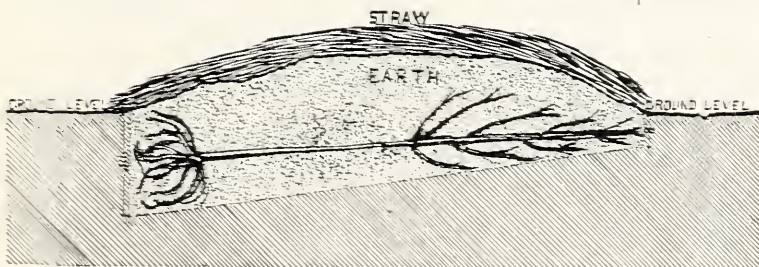
Care of Trees Received in the Fall. This cut shows a cross sectional view of a "trench" with trees in it properly covered for winter. Select a location where water will not stand. Dig a slanting trench the length of the longest tree, two feet deep at the end for the roots, and ten inches at

the top end. Trench should be wide enough to allow the stock to be well spread apart as the dirt must be packed in well and no air spaces left. Mud the roots thoroughly in thick mud. Sift the dirt on and cover up the entire tree, root, body and branch. When the earth is all on, tramp the surface down hard to turn water. As soon as the ground has frozen about four inches, cover the trench with two feet of straw or stable manure. Do not uncover until spring, just as you are ready to plant. The straw covering on the root end of the trench should extend out on the ground at least three feet beyond the roots to insure complete protection to the stock lying nearest the surface.

General Care of Trees

Pruning. As a general rule June is the best time for pruning in the northwestern states. The principle of pruning is based on the **correction** of wayward growth and the production of uniformity. To this end, such branches as need pruning should be cut out before they become large as the general vitality of the tree is always somewhat drawn on by cutting off large limbs. For trimming small branches a sharp pruning knife may be used. Large limbs should be sawed off, first carefully cutting the bark clear around to avoid peeling or splitting. If the removed branch is more than an inch in diameter, the stump should be painted over with shellac or grafting wax.

Sunscald. In the north where the winter sun hangs low in the south, nearly all smooth and tender-barked trees, like apples, Linden, Mt. Ash, etc., are subject to "sunscald" during the winter. This is caused by the sun's rays shining directly on the body of the tree on the south side: the sap is started in that part of the tree and later on the bark bursts—sometimes so badly as to kill the tree. This is one reason why orchard trees should have all the low branches left on, especially on the south side; if this is done they will soon furnish enough shade to protect



The Proper Method of Trenching Stock for Winter.



This Picture Gives You an Idea of our Tremendous Stock of Forest Seedlings.

the body. The best method for preventing sunscald on young trees is to wrap the bodies with strips of burlap, winding it spirally from the base and tying the end in the lower branches.

Rabbits, Mice, Etc. The most effectual way of destroying these vermin is to poison them with strychnine. Dissolve an ounce of strychnine in five quarts of warm water. Then stir in four quarts of shelled corn. Let it soak for half an hour; then dry the corn thoroughly. This will keep indefinitely. Place a handful in the various places frequented by the vermin. The corn should be kept in a can or tight box and plainly labeled "Poison." Another good way to poison rabbits is to put out sweet apples, cut in half, with a little arsenic sprinkled on the cut surface. Cut the apple in two cross-wise, rub arsenic on the cut surface, put sticks into the ground in the runways and about a foot high, stick the apple onto the stick cut surface down. The burlap wrapping described above is also an effectual protection against the "cottontails." Mice do not move far in winter and so do their damage where given a place to harbor. For this reason mulching around trees, if it contains straw or other resting material, should be removed for a foot from the tree, and a little earth mounded around the base; if place is badly infested, pack the snow around tree so they cannot harbor under the crust. When roses, tree paeonias, and other tender and valuable shrubbery are covered for winter, it is well to scatter poisoned corn among them. Look your place over frequently during the winter and when you notice the work of the little marauders, go after them with the poison.

Wormy Apples. The apple worm hatches from the Codlin moth, and all commercial orchardists have now adopted spraying with paris green as a

successful means of preventing wormy apples. This spray is mixed in the following proportions: Fifty gallons of water, one-fourth pound paris green and six pounds **unslaked** lime. The lime is used to prevent the arsenic from burning the foliage; be sure and use unslaked lime. The time to spray is just after most of the blossoms have dropped off. The egg is laid by the moth when the tree is in bloom and is put in the "blow end" of the little apple. It is therefore important to apply the spray before this blow end closes up, which it does in a very few days after the blossom falls. If this is done at the right time, the blow, when it closes up, holds in the poison and the newly hatched worm meets an early death as soon as he begins to eat. Spraying should be done thoroughly; the reward of perfect fruit is well worth the work.

The Tent Caterpillar. In a few sections this pest has done considerable damage, but it is easily dealt with. The eggs are laid in clusters and as soon as hatched the little "army" begins making a web "tent" between the branches, into which the worms retreat at night and when not feeding. At these times both tent and worms are quickly destroyed by holding a burning piece of paper or torch under it. Spraying the leaves with the paris green solution will also kill this worm.

Blight. This is a common disease affecting the apple, for which no remedy has ever been found. It generally shows itself during the warm, wet weather of early summer. The ends of the branches are all that is generally affected. These should be cut off and burned. Most varieties are not seriously injured by blight. Trees found to be chronic blighters should be cut down and replaced, as they spread the disease.



Field of 500,000 Apple Trees, Jewell Nurseries, Lake City, Minn.

Suggestions for the Care of Orchards

The following suggestions, while written principally for apples, plums and the hardy cherries, also apply to peaches, pears and other semi-hardy tree fruits.

Soil. As a general rule it may be said that any soil which will raise good garden crops is adapted to orchard purposes. Plums and cherries do best on light soil, with considerable sand in it, while apples prefer heavier ground. In all cases low ground where water stands should be avoided. A clay sub-soil gives best results, as it does not dry out so rapidly. However, successful orchards are being maintained on gravel sub-soil by thorough cultivation.

Location. Moisture is what trees most need. The best location is on a northern slope (i. e. sloping toward the north). This, however, is not a necessary condition as the majority of orchards are planted on level ground. Some of the best orchards in the northwest are on a southern exposure, but the soil is good and their care of the best. If, however, your land contains a northern hill-side, even though it be steep, you will find there the best orchard conditions. In nature you nearly always find the south slopes bare and stony, while those inclining northward are covered with growth of some sort and good soil. Why? Because the sun shines so hotly on the southern exposure that it dries out all moisture and prevents the growth of vegetation. The same conditions affect the growth of fruit trees. Of course a gentle south slope does not matter; look at the soil—that always tells the story. High ground, with a good circulation of air is desirable.

Pruning. The low branches on orchard trees should be encouraged, especially on the south side. A low branched tree is in every way preferable. The ground is shaded as well as the body of the tree, the fruit is easier picked and the limbs are not so liable to be broken by the wind. Therefore the trees should be planted deep and the lower branches allowed to grow untouched. Eighteen inches from the ground is about the right distance for the lowest branches. Only such pruning should be given fruit trees as will prevent over crowding of branches at any point. Suckers coming up from the ground at base of tree should be kept cut off.

Fertilizing. You cannot expect the highest success by taking nourishment from the soil indefinitely without putting back something, and it is a good thing to begin fertilizing at once. The best fertilizer is stable manure. This may be hauled on in the winter when other team work is slack. Put on a liberal pile around each tree, making a coat about three feet in diameter, being careful not to pile any of it against the trunk, as it would be liable to heat and injure the bark. During the summer, if the cultivation advocated below is practiced, this mulch is gradually worked into the soil where it decomposes and puts back the humus taken out by the tree. Where stable manure is not obtainable, straw, old hay or marsh grass are effectual substitutes.

Wind Protection. When the orchard is in an exposed prairie location it is advisable to plant a belt of thrifty trees on the sides from which the prevailing winds come. A better insurance against protracted drouths could not be made.



Field of Young Shelter Belt Stock, Jewell Nursery.

Small sized trees (both deciduous and evergreen) for this purpose may be obtained cheaply in 100 or 1000 lots. Send for prices.

Cultivation. When the surface soil is hard, packed, baked—as all loam soon becomes if uncultivated—the warmth of the sun draws up the water from the subsoil where it is evaporated. Now by stirring the top soil with a drag or cultivator, we produce a “dust blanket.” Instead of being packed hard, myriads of air spaces are put between the particles of earth, which condition

largely prevents the “leaking up” of moisture from the sub-soil to the surface. This is why cultivation saves the soils’ moisture and the fruit grower should regard it just as necessary in his orchard as the farmer does in his corn field. There is no doubt but that young orchard trees are greatly hastened into bearing by cultivation, while for reasons given above, we earnestly advocate continuing it as long as you want good fruit and lots of it. When and how: Begin about May 1st and continue until about the middle of August. The old rule was to cultivate after every rain.

Spraying Formulas

We give below the formulas in most common use in the north. While the short and usually dry seasons give the northern grower comparative freedom from insects and pests common farther east and south, it is well to know the simple means necessary to combat such troubles as may occasionally appear. The old saying that “an ounce of prevention is worth a pound of remedy” is most true in this case. A good administration of paris green given a field of potatoes at the right time easily accomplishes a hundred times the results of a tardy treatment. That is only an illustration, chosen because common. A serviceable sprayer is a necessity in every well conducted garden, and the demand for them has brought the cost down to a minimum. For the accommodation of patrons we carry a line of tested garden sprayers and will quote prices on application.

Bordeaux Mixture. For rots, blights, mildews and other fungous or parasitic diseases. The best and safest for these purposes, mix in following proportion:

Copper Sulphate (Blue Vitriol).....1½ lb.
Quick or Stone Lime.....1 lb.
Water13 gals.

Dissolve the copper sulphate in an earthen or wooden vessel; a good way is to tie it in a piece of cheese cloth and hang near the surface until dissolved. Pour this liquid into the tub or barrel which is to hold the stock solution. Then slake the lime in enough water to make it “milky.” Pour this in with the copper sulphate, being careful to drain it thoroughly through cloth or a fine wire strainer. Then add water to bring the total solution up to the required amount. Stir thoroughly each time sprayer is filled, and agitate frequently while the spray is being applied.

Paris Green. For insects that chew. Mix in following proportion:

Paris Green3 oz.
Water25 gals.
Quick or Stone Lime¾ lb.

First slake lime in enough of the water to make it “milky;” then strain this thoroughly into the tub or barrel and add the rest of the water. Stir in the Paris Green slowly. Stir well each time sprayer is filled and agitate frequently while the spray is being applied. Where bordeaux mixture is being used and Paris Green is needed at the



Digging Apple Trees in Our Nurseries.

SPRAYING FORMULAS—Continued.

same time, it is common to apply them together. They unite easily and neither loses strength by the mixture.

Arsenate of Lime. For insects that chew. A valuable substitute for paris green, and rapidly coming into favor as it is equally efficient and at least one-half cheaper, will not burn the tenderest foliage.

White Arsenic2 oz.
Sal Soda8 oz.
Water1 pint

Boil all together until the arsenic and soda dissolve. This stock solution is sufficient for fifty gallons of water and may be mixed as wanted. For each twenty-five gallons of the spray so mixed, add one pound quick lime, which should be slaked and strained as directed for paris green. Stir well before filling sprayer.

White Hellebore. For insects which chew. Chiefly used on bushes with ripening fruit as it loses its poisonous properties when exposed to the air for a few hours. Is used both dry and in water. Dry: Mix one-fourth pound of flour to each pound of hellebore, which is to make it adhesive; apply in early morning while the dew

is on. In water: 1 oz. hellebore to each three gallons of water; apply with pressure sprayer.

Kerosene Emulsion. For insects which suck, like aphids, scale, mealy bugs, thrip, etc.

Kerosene1 gal.
Rain Water $\frac{1}{2}$ gal.
Soap $\frac{1}{4}$ lb.

Mix thoroughly together. This makes the stock solution. For use, mix one part stock solution with nine parts water. A good spray for shrubs, roses and other out-door work where insects of this kind are met.

Tobacco Water. For soft bodied insects. Kills by outside contact. Tobacco stems may be obtained free from any cigar maker. Boil one pound of stems to each two gallons water. Strain off liquid and add enough water to make original amount. The efficiency of tobacco water will be increased by adding whale oil soap at the rate of one-fourth pound of soap to each twelve gallons of the water.

Sulpho-Tobacco Soap. One of the best insecticides for the window garden. It is cheap, easily applied and good for use with all kinds of house plants.

A Rule to Find the Number of Plants Required for an Acre

The number of square feet in an acre is 43,560. Divide this amount by the number of square feet required for each plant. Thus, to find how many Currants are required for an acre planted 4 feet by 6 feet, 6 times 4 equals 24; 43,560 divided by 24 equals 1,815—the number required for an acre.

In Minnesota, fruit trees do not grow to be as large as in the Southern and Eastern States and can be planted closer. We have adopted the distances here given but in southern localities will be best to set farther apart.

Plums, Cherries, Pears, and Peaches, 16x16 ft...170
Apples, 20 by 22 feet.....100
Strawberries, 1 by 4 feet.....10,890
Grapes, 8 by 8 feet.....608
Gooseberries, 4 by 6 feet.....1,815
Currants, 4 by 6 feet.....1,815
Raspberries, red and black, 3 by 6 feet.....2,420

Blackberries, 4 by 6 feet.....1,815
Dewberries, 3 by 6 feet.....2,420
Juneberries, 4 by 6 feet.....1,815
Rhubarb, 3 by 6 feet.....2,420
Asparagus, 1 by 2½ feet.....17,424

209 feet on a side in a square acre.



Going to work at Jewell Nursery.



A "Jewell" Planting.



Pickwick Apples.

Apples

No fruit known to the cultivator in the North Temperate Zone can take the place of the apple as a food product. As a culinary fruit, none excel it. It graces the table in a greater variety of forms than any other, and as a dessert fruit, few are its equal, and none its superior. The time has come when Minnesota and the other northern states produce a large quantity of the apples they consume. Not only the splendid late fall and early winter varieties are now grown in large quantity, but many new creations in the line of late keeping varieties have been introduced, and are now proving as hardy in the North as the Russian varieties. Jewell apple trees are grafted and grown here in the North under all the severe climatic conditions of this section, and they are therefore superior as a stock for northern planters, both in the garden and orchard.



Ben Davis.

Standard Northern Varieties

The following list comprises varieties that have either originated in the northwest or have been introduced from Russia. They are varieties that have been tested in the northern states and are now planted in this section.

Anisim (A). Season November to January. Tree spreading and a prodigious bearer; unusually free from blight and about equal with Wealthy in hardiness. Fruit medium to small, roundish; color, greenish nearly covered with dark red, over which is a bluish bloom; flesh white, juicy, fine grained, pleasant subacid. Beautiful when well ripened.

Ben Davis (D). Season January to April. Vies with the Baldwin as a profitable commercial variety in many sections. Fruit large, handsome, brightly striped with red; flesh of medium quality, variable in flavor.



Duchess.

APPLES—Continued.

Charlamoff (B). Season August to October. Tree spreading, vigorous and productive. Fruit above medium to large; light yellow with crimson stripes and splashes; flesh white, fine grained, pleasant flavor; often stained with red next to skin.

Duchess (Duchess of Oldenburg). (A.) Season August and September. The standard of hardiness in Minnesota. Tree upright, vigorous, an early and annual bearer of uniformly large crops. Fruit large, greenish yellow with red stripes; flesh light yellow, medium fine grained, firm; flavor a pleasant acid; a great cooking favorite and prime market sort. Duchess is a good shipper for an early apple and commands good prices. Should be found in every orchard, large or small.

Fameuse (Snow Apple). (D.) Season November to January. An old and well known variety. Fruit small to medium, greenish yellow mixed with faint stripes of red; tender, juicy, slightly perfumed.

Gano (D.) Season January to April. A rival of Ben Davis as a market apple in the central United States apple belt. Much like and fully equal to Ben Davis, except is redder and not quite so large.

Grimes' Golden (D.) Season January to April. Tree vigorous, upright, spreading, a good early bearer. Fruit rich yellow, sometimes with net veining of russet; flesh yellow, firm, crisp, rich, spicy, sub-acid, quality the best.

Hibernal (A.) Season November, December. Probably the hardiest of the Russian apples adopted by many prominent horticulturists as a standard of hardiness. Tree sturdy, vigorous; very spreading and productive. Fruit large to very large, irregular, greenish yellow with dull bronze red on sunny side; flesh acid, juicy, very good for cooking.

Jewell's Sweet (C.) A handsome tree—healthy and a good bearer. Fruit medium size; sweet; color yellow and green; season early. Originated in northern Iowa. This variety we have tested for a number of years. We consider it one of the best sweet apples that has been introduced in the Northwest.

Jewell's Winter (B). Season January to March. Tree vigorous; an early bearer. Fruit hangs to tree in hardest winds—a valuable feature. Fruit medium; surface yellow with rosy crimson blush on sun side; flesh white, tender, crisp, juicy, pleasant mild sub-acid, flavor good. One of the best late keeping varieties for northern orchards.

Jon'athan (D.) Season November to February. Delicious and strictly dessert apple that always commands highest market prices. Fruit medium, roundish; surface very smooth, clear light yellow almost covered with rich dark red on sunny side; flesh white, tender, juicy, aromatic.

Longfield (B.) Season October to December. Fruit medium; shady side yellow with greenish bloom, sunny side yellow and red; flesh white, fine grained and of excellent aromatic flavor; juicy, sub-acid.

Lowland Raspberry (B). Season August. Also known as Liveland Raspberry. Fruit medium to large; splashed and shaded with red; flesh stained with red, fine, tender, juicy; flavor sub-acid; extra good; very beautiful.

Malinda (B). Season February to March. An irregular but steady grower of about same hardiness as Wealthy. Wherever grown in Minnesota it is giving great satisfaction as a long keeper. Fruit medium; green with blush of brownish red; flesh hard, medium fine grained; flavor sub-acid and good.

McMahon (B). Season October to December. Also known as McMahon's White. Fruit large to very large; color greenish pale yellow to nearly white, often with suffused pale blush on sunny side; flesh pale yellow with good acid flavor. A good table apple in season; splendid cooker.

McIntosh (C). Season December and January. A choice variety. Tree vigorous with spreading head; a good annual bearer. Fruit above medium to large; almost covered with brilliant solid crimson, a beautiful fruit; flesh snow white, crisp, very tender, aromatic sub-acid; very good quality.

See Page 11 for description of
Pickwick Apple



Jewell's Winter—One of our Best.

APPLES—Continued.

Northwestern Greening (B). Season December to March.

Fruit large to very large; becoming yellowish green when ripe; flesh yellow, fine grained and firm; flavor a good sub-acid; very smooth and attractive. Should be given plenty of room in the orchard to secure large, even fruit.

Okabena (B). Season September to November. Vigorous, absolutely hardy and an ideal orchard tree in every respect. Bears very young. Fruit medium to large; yellow, striped and splashed with carmine which is heavy on sun side; flesh yellowish white, fine grained, crisp and juicy; flavor sprightly sub-acid; quality excellent. Ripens after Duchess and valuable in market on that account.**Patten's Greening** (A). Season November to January. Fruit large to very large when well grown; green with often a blush of red or brown; flesh yellowish white, rather coarse but firm; core small; flavor a pleasant acid. Tree vigorous and spreading and exceptionally hardy; an early and regular bearer.**Pewaukee** (C). Season December to March. Successful in favorable locations. Fruit large, yellowish green, striped and shaded with dull red, overlaid with a bluish bloom; flesh yellowish, rather coarse grained, firm, juicy; flavor sub-acid.**Pickwick Apple** (A-B). We are now ready to put on the market a new Apple specialty which we have named Pickwick. This is a new Minnesota variety which we discovered about six years ago. We at that time were so favorably impressed with it that we contracted for its control and have been building up its propagation as fast as possible. We have submitted this Apple to every possible test here, and we believe this variety is going to be a winner. It is a strong, vigorous tree, splendid grower both in the nursery and orchard, and seems to have all the qualities desirable for a successful variety. Of course, in any Apple the quality of the fruit is the first consideration. It is quality that made the Wealthy and Delicious so popular. It was quality that first attracted us to the Pickwick. The history is brief: A Southern Minnesota farmer came into our office one day in March some years

Northwestern.

ago with some apples of a seedling apple growing in his pasture. The fruit was beautiful, dark red in color, well preserved and of delicious quality. We were immediately interested, and we have ever since been following up its possibilities both in the nursery and the orchards. This variety has all the marks of a winner. In flavor it is the most delicious of any late keeping apple that has yet been found in Minnesota. In this respect it is very much like the well known Jonathan, and as it is of such fine color and splendid keeping qualities there can be no doubt of its wonderful success as a commercial apple. At the last Minnesota Horticultural meeting it scored 7% higher than any other seedling apple exhibited.

Red June (D). Oblong; medium size; yellow background with crimson red. Very tender and juicy; flesh white; sub-acid. Excellent quality; early.**Salome** (B-C). Hardy in Southern Minnesota. A late keeper, good until April. Bears young and annually. Fruit medium large, oblong; color green, striped with red; excellent quality.**Scott's Winter** (B). Season December to February. Fruit small to medium; color deep red over yellow ground; flesh yellowish white, coarse grained, juicy; small core; flavor pleasant acid, good.**Tetofski** (A). Season August. One of the earliest apples to ripen in the northern states. Fruit small to medium; light yellow, striped and splashed with red; flesh white, tender, juicy; flavor sub-acid, extra good quality. Tree stout and upright in growth.**Talman Sweet** (B). Season December to March. One of the most popular of the old eastern varieties. Tree is vigorous, upright, spreading and very productive. Fruit above medium; whitish yellow, often with faint blush on sunny side; flesh white, firm, moderately juicy, fine grained, rich and sweet.**University** (B). Season November and December. Fruit large, very regular; surface a clear yellow on sunny side; core medium, flesh white with yellow veinings, flavor pleasant sub-acid, quality good; tree hardy.

Okabena.



Grimes' Golden.

APPLES—Continued.

Wealthy (B). Season October to March. Almost too well known to need description. Since its origination by the late Peter M. Gideon in 1861, it has rapidly spread over the entire country until now it is extensively planted in all the apple growing states. Fruit large, regular, smooth, light yellow with crimson stripes and splashes; flesh white, often stained with red, tender, very juicy, sprightly sub-acid with delicious aroma. Splendid eating, dessert and cooking apple. Market demand never filled. Minnesota is justly proud of this variety.

Winesap (D). Season December to May. Has been popular in the East for over one hundred years and is favorably known wherever it is hardy. One of the leading export apples. Medium, conical, dark red; very smooth. Acid to sub-acid, juicy and rich, very valuable for both family and market.

Wolf River (B). Season October to January. One of the very largest apples grown in the North. Color yellowish green with stripes and splashes of carmine; very handsome and showy; flesh nearly white, firm and rather coarse grained; flavor sub-acid, fair to good.

Yellow Transparent (B). Season early August. One of the very earliest apples. Fruit medium; smooth, transparent skin; clear white, becoming pale yellow when fully ripe; flesh white, tender, fine grained, of splendid quality.

Crab Apples

The following varieties of Crabs are especially recommended for planters in all sections.

Dartt (Hybrid). (A.) Season September to October. A vigorous, extremely hardy and ideal orchard tree. Fruit large for a hybrid—yellow ground covered with rich red stripes, underlaid with lighter red on sunny side; flesh yellow, medium fine grained, sub-acid.

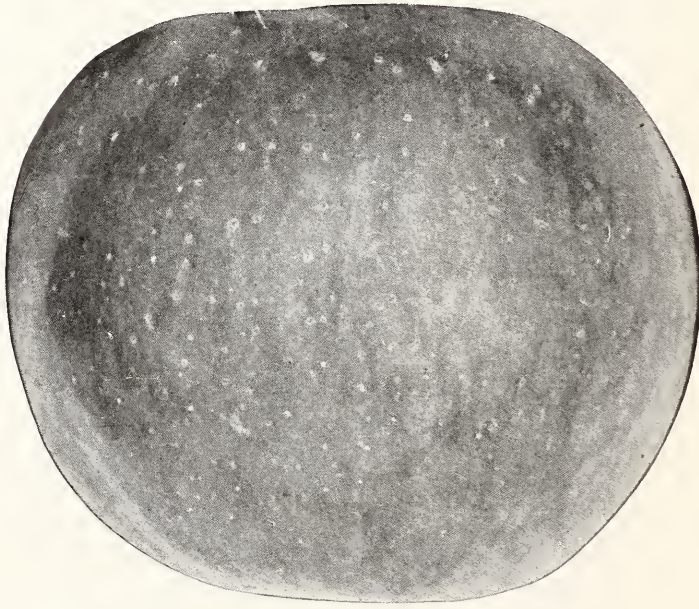
Early Strawberry (A). Season early August. An old-time favorite, especially in the Northwest. Fruit medium, greenish yellow ground.

Fairbault (Hybrid). (A.) October and November. A large handsome hybrid, red over greenish yellow ground. Tree upright, vigorous, hardy; very free from blight. A splendid variety.

Florence (A). Season late August. A hardy spreading tree; color carmine; flesh yellowish, acid; excellent for cooking. A fine jelly crab, and valuable for early market as well as home use.

General Grant (A). October, November. Large yellow, red stripes; flesh white, sub-acid.

Hiller (B). Season September and October. A vigorous upright grower. Bears regularly and abundantly, and fruit hangs on well. Fruit medium to large; rich green overspread with dull red on sunny side; flesh white, firm, very juicy, sub-acid, pleasant. A splendid crab



Wealthy—The Old Favorite.



Hyslop (Crab).

for jelly and other cooking purposes, for which it fully equals Transcendent; tree superior to that variety in its freedom from blight.

Hyslop (B). Season October to December. Fruit medium; heavy shadings of deep crimson and splashes of maroon; flesh fine, firm, yellow, astringent; bears abundantly in clusters which makes the tree exceedingly ornamental.

Lyman's Prolific (A). Season September to October. Fruit large, yellow and red, striped and splashed; flesh yellow and rather fine; of first-class cooking and preserving quality.

Minnesota (Hybrid). (A.) Season October to January. One of the most desirable; bears liberally with age and is growing in favor. Fruit large, light yellow, often splashed or mottled with blush on sunny side when allowed to fully ripen; flesh cream white, fine

grained, juicy; flavor mild sub-acid and slightly aromatic. Delicious to eat out of hand and particularly desirable for culinary purposes.

Orange (Hybrid). (A.) Season October. Fruit large, even, light orange when ripe; flesh white, fine grained and crisp; firm and a good shipper; flavor delicate and juicy. Makes a fine amber jelly and a splendid canner. Also unexcelled for preserves.

Pickett's Prolific (Hybrid). (A.) A favorite on account of its good, firm, shipping quality and the hardiness of the tree. Fruit medium to large for a crab; color green, slightly yellowish overspread with a dull red on sun side; flesh firm and of good quality; flavor sub-acid; another good jelly crab. The fruit is ripe and marketable after the Transcendent and others of that season are gone and thus commands a good price on the market. Its firmness makes it a good shipper.

Siberian (A). Fruit small, round; flavor sour—still it is excellent for jelly and canning. A free grower and handsome; very hardy.

Transcendent (B). Season September. Fruit medium to large; color brownish yellow with blush of carmine; flesh firm and crisp, yellowish, fine grained, very juicy, acid; fine for jelly.

Whitney (Hybrid). (A.) Season August and September. Fruit large to very large for a hybrid; yellow, striped with red and mostly covered with red on sun side; flesh yellow, very juicy, and fine grained; flavor rich and almost sweet.



Florence (Crab).



De Soto.

Plums

The Plum is the great native tree fruit of this northern region and the improvement which the native varieties have made under cultivation makes it equal in importance to that of apple.

In productiveness the native plums are unsurpassed by any other class of plums or indeed by any tree fruit. In fact the tendency of nearly all varieties is to over-bear which however is easily overcome by judicious thinning before the fruit is developed. They are all very regular in bearing and a good crop may be expected each season if proper care is given to the tree. No other fruit tree in this or any other section of the country is more easy of culture, when once it is understood, than is the plum of native origin. Unlike the apple, these plums have been here in this climate for hundreds of years and are so constituted in root, branch and fruit bud that the extremes of our seasons do not injure them. Thus the grower has only the matter of proper culture to contend with as the best varieties are thoroughly hardy.

Select Varieties of Americana Plums

There has sprung up a long list of native varieties and we present below those which have been more thoroughly tested and found superior by actual commercial growers in the North. We have therefore eliminated from this list many varieties of real merit as we find the average planter prefers to order from a list restricted to the best varieties and thus varieties "just as good" or "not quite so good" are here dropped.

Aitkin (A). Has the most northern origin of any commercial plum and is also one of the very earliest to ripen, fully two weeks before DeSoto. Fruit large, greenish yellow, ground covered with brilliant red, turning to dark red when ripe. Suitable for the extreme North.

Bursoto (B). Said to be hybrid of Burbank and DeSoto. Tree characteristic Americana. Fruit large and of fine appearance; stone semi-cling; quality excellent.

Cheney (A). Fruit irregular, oval, medium to large; color a dark and rather dull red with slight blue bloom; skin thick; flesh yellow and firm. Season early.

De Soto (A). Probably the most grown of any plum of the Americana group. Productiveness almost too great; tree should be thinned to prevent overbearing and improve size of fruit. Season medium. Fruit medium; orange overlaid with crimson; flesh yellow and firm; of fine flavor and quality.

Forest Garden (A). Fruit large, nearly round, dull purplish red with thin bloom; flesh yellow, sometimes reddish next to the stone; firm, sweet and of pleasant flavor; cling. Season medium. One of the most extensively grown varieties in northwestern orchards and generally reported as a profitable sort.

Free Silver (Terry). (A.) Originated in northern Iowa. One of the largest and finest native plum that has been introduced. Ripens very evenly. Resembles the Hawkeye in appearance, but larger. Quality excellent.

Hawkeye (A). One of the largest and best plums grown in the Northwest.

Fruit large, round, oval, thick skin that bears handling; color dull red over yellow; flesh yellow and of prime quality. Bears young; prolific and regular. Firm, carries well to market. Tree hardy and thrifty; a splendid fertilizer. Late.

Jewell (B). The coming plum of the Northwest.

The tree is healthy and vigorous in its growth. Fruit is the largest of any Americana plum that has yet been introduced and proved worthy. Flesh firm but juicy, and of excellent quality. Its firmness makes it a good shipper. Color a rich purplish red. Average specimens five inches in circumference. Hangs to tree well.



Forest Garden Plum.

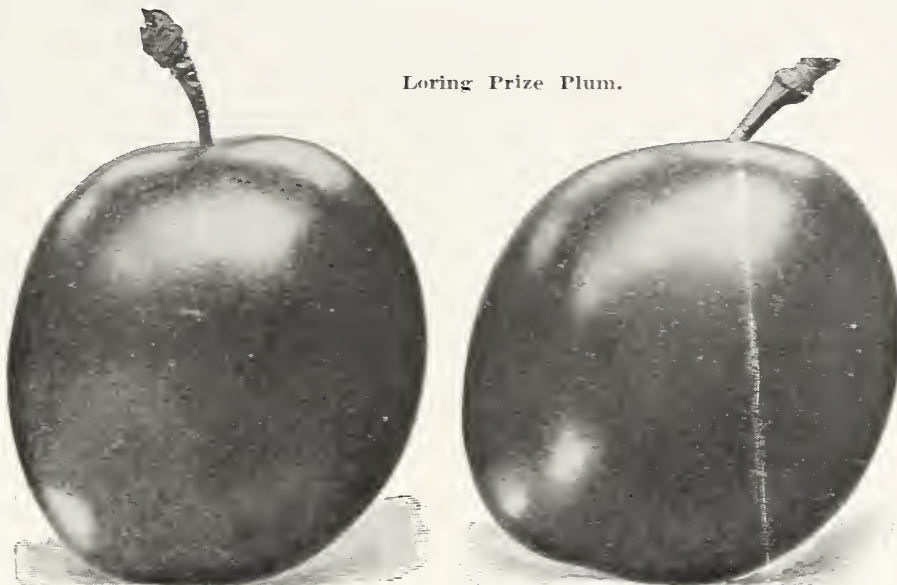
PLUMS—Continued.

Krikon (C). Imported from Sweden in 1901. Is one of the few blue plums that can be successfully planted in southern Minnesota. The tree is upright and requires but little pruning. Branches low, well adapted to open localities. Fruit medium size; pit very small; skin thin; meat solid; very juicy and sweet.

Loring Prize Plum

To encourage and stimulate and create a finer quality of plum, Hon. C. M. Loring offered a prize for a plum that would meet certain qualities including size, shape, color, flavor, smallness of pit, firmness and texture of flesh, together with general good characteristics of the tree. Such a plum was originated at Lonsdale, Minnesota, a few years ago and is now known as the Loring Prize Plum, which in spite of all competition, received the unanimous reward of the committee. This plum is placed on the market for the first time this year and it is with a feeling of pride and confidence that we offer it, believing that it will not only quickly win its way, but will also prove a success wherever choice fruits are grown and planted. It is the largest and best plum for the northern planters

Loring Prize Plum.



today. It is a splendid commercial fruit, good for canning, delicious to eat, has a small pit, is of a bright attractive color. The seed was the Burbank crossed by the DeSoto or Weaver plum. The size is from 1¾ to 2¼ inches in diameter. It is slightly oblong, of bright color, fleshy, like the Burbank and nearly Freestone, delicious in sweetness and mild in acidity. We consider it superior to the large red California plum that we see in the fruit stores. If canned when half ripe, it has a slight peach flavor attaining the pure plum flavor when ripe. It is a very heavy annual bearer, commencing to bear at the age of three or four years. It has perfect blossoms. The fruit has a strong stem and is not easily blown from the tree. It ripens early. The tree is a vigorous grower, with firm wood, and as hardy as any wild plum we have grown. In shape, the tree is medium spreading, the branches shapely and strong.

Stoddard (B). Color pinkish red over yellow, with very small white dots and bluish bloom over all; skin thick and therefore a good shipper; flesh yellow; fairly juicy and of good quality; stone medium, cling. Season medium early.

Surprise (B). Fruit large to very large; skin medium, thick, tender; bright red; flesh pale yellow, meaty, fine flavor; quality extra good. Season medium.

Wolf (B). No western native has perhaps been more generally commended than this. It is pronounced productive and regular in bearing from southern Iowa and Nebraska to Stonewall, Manitoba, and appears to be generally satisfactory. Fruit round-oval, large; color crimson over orange, prettily dotted, with bluish bloom; flesh yellow and of good flavor and quality; stone perfectly free. Season medium. Tree beautiful and symmetrical; inclined to overbear. Very popular in market.

Wyant (B). Fruit medium to large; color purplish red, inclining to orange on shaded side; stone semi-cling; skin thick; flesh rich yellow; sometimes red next the stone; quality good, though variable, being sometimes quite astringent.

Weaver (B). One of the few free stone plums that are hardy enough to be commercially successful in the north. Has been well tested, under cultivation since 1875, and widely distributed throughout the northwest. Fruit, large, oval, color orange heavily overlaid with red; skin thick with light bluish bloom; flesh firm clear golden; quality rich, splendid. Season medium late.



Surprise Plum.



Nordine's Cherry.

Nordine's Cherry No fruit has been more popular in recent years than the Compass Cherry Plum, but it has one defect which has proved most serious. That is, the tree itself seems to have a tendency to grow with very weak crotches and when the tree attains its full height, it breaks down very easily and on that account has a very short life. For a number of years we have been endeavoring to overcome this, by planting seedlings of this hybrid and picking the best trees. We have at last been able to overcome this weakness and now have a tree which has the main characteristics of the Compass Cherry and which is a splendid tree. The fruit is slightly larger than the Compass Cherry. The cherry characteristics rather emphasized more so than the Compass Cherry. We call this the Nordine Cherry and we offer them to the public with a conviction that it is just the thing for early fruit for canning.

THE LATEST THING IN HORTICULTURE.

Refer to page 9, the Pickwick Apple and page 15, Loring Prize Plum. You will want them sooner or later anyway.

Compass Cherry-Plum (A). Prob-

ably no variety of stone fruit grown in the north-western states has attracted more attention than the Compass Cherry-Plum. It is a cross between the Sand Cherry and the native wild plum. The Compass Cherry-Plum is absolutely hardy. All of our stock of this variety is grafted on hardy wild plum roots, thus making every tree "iron clad" in root and branch.

(We wish here to warn planters that some growers are selling Compass Cherry budded on peach roots and Myrobalan plum stock. Such trees are worthless in this climate.) Its early bearing is remarkable. A great many two year old trees as they stand in the nursery row are found with cherries on them and we hear constantly from buyers that many trees fruit well the same year they are set out. In hybridization, the Compass largely lost much of that astringency near the skin so characteristic of the Sand Cherry. The amalgamation seems to have considerably developed the tender flesh and juiciness characteristic of the cherry. In shape, size and coloring of the fruit, the characteristics of the plum and cherry are about evenly divided.

When young and green the fruits have more the appearance of undeveloped plums, but as they mature they fill out and become more round like the cherry. In color it changes from green to a bright red, deepening as it becomes ripe. For canning the Compass is valuable in this latitude, and when rightly preserved makes an excellent stock for pies, puddings, sauces, etc. While it fills a unique place in the north, where it stands today as the principal hardy fruit approaching the cherry, it is not to be compared with the well known commercial cherries grown in our Eastern and Central States.



Compass Cherry.



Sapa.

Hansen's Hybrid Plums

These new fruits were originated by Prof. Hansen of the South Dakota Experimental Station, known as Hansen Hybrids. They are perfectly hardy and are growing on the cold, bleak prairies of the Northwest. The young trees bear fruit the next year after transplanting and often bear in Nursery row. We are large growers of Hansen Hybrids. We graft all varieties of wild plum roots thus making them iron-clad from root to branch. Your orchard will not be complete without some of these.



Hanska.

Hanska Bright red, heavy blue bloom, firm flesh, good quality, rich fragrance, bears early in abundance. When cooked, flavor of Apricot. A cross between the wild American plum and the firm fleshed fragrant Apricot plum so popular in California.

Opata Cross between Sand Cherry and Gold Plum. Tree vigorous, fruit dark purplish red, flesh green, quality delicious, pit small, season early, fruits second year after transplanting.

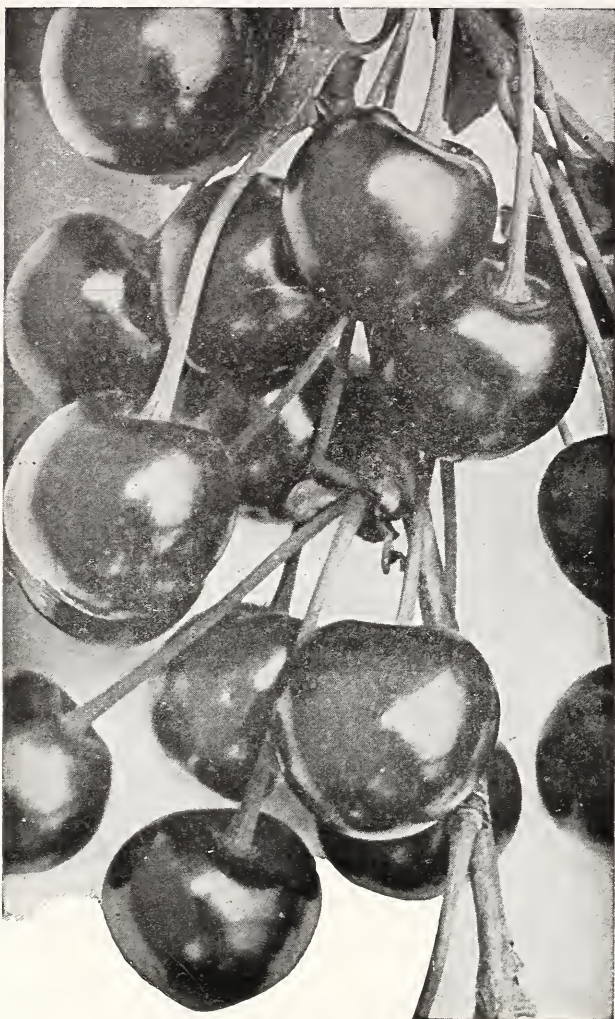
Sapa Cross between Sand Cherry and the Sultan Plum. Fruit is a dark blue, glossy skin, deep wine red flesh of the Japanese type. Trees frequently fruit when only one year

old. This variety took first prize as Seedling Plum at the Minnesota State Fair, 1909. A high compliment to this variety. Splendid for eating out of hand or canning. Tree very hardy. Pit small. Fruits early in the season.

Toka One of Prof. Hansen's New Fruits. Originated at South Dakota Experiment Station. Bears annually even when other varieties fail. Tree strong and vigorous grower; early and heavy bearer of handsome fruit; color red; flesh firm; splendid cooker. A valuable acquisition to the plum family.

Waneta This wonderful large new plum is the latest addition to Prof. Hansen's productions. Following is Prof. Hansen's own description: "My belief is that in this variety I have combined the best points of the native and Japanese plums. It is probably the largest of the 10,000 seedlings. The size here at Brookings, S. Dak., in 1912, was two inches in diameter, weighing about two ounces. The female parent is the Japanese apple plum,

the male parent the Terry plum, the largest of the native varieties." All reports indicate that the Waneta is everything that Prof. Hansen claims it to be. Its color is deep red, flavor is delicious. The tree is hardy and very prolific. It was named after an Indian Chief whose home was on the James River in the Dakotas. Its size and quality, the hardiness of tree and great productiveness is such that the demand will be great. May be planted with other Americana plums or with the Hansen Hybrids.



Early Richmond.

Cherries

The following are selected varieties, desirable for general culture in sections where they are hardy. The Heart and Bigarreau are so designated and those followed by an "M" belong to the Duke and Morello class.

Early Richmond [English Pie Cherry] (B-M). (B.) Probably the most popular variety of the Central States. Exceedingly productive and regular in bearing where hardy. Fruit dark red, medium to large. Unsurpassed for pies, puddings, etc. June.

English Morello (B-M). (B.) An old and popular variety. Tree dwarf and slender. Fruit large, dark red nearly black; flesh tender, juicy, slightly acid, rich. July.

Montmorency [Large] (B-M). (C.) One of the finest flavored cherries in its class. Valuable for canning and preserving; fruit large, dark red.

Ostheime (B-M). (C.) Fruit large, nearly black when ripe; flesh juicy and rich, fine for both dessert and cooking; finds ready sale on all markets. One of the most productive.

Sand Cherry (A). Properly speaking, this variety belongs more among the ornamental shrubs than the cultivated cherries. We list it here as it has been found very desirable in the extreme parts of Minnesota, Manitoba, etc. Now practically superseded by the Compass Cherry-Plum which is described elsewhere in this catalog.

Wragg (B-M). (C.) Originated in Iowa and is very popular in the west. Fruit is similar to English Morello. Perhaps the nearest approach we have made to the cherry of good commercial quality that is hardy. July.

Pears

Where hardy, the Pear is one of the staple fruit crops. Very few marketable Pears will live through Minnesota winters. We are, however, able to propagate first class trees in our nursery, and offer the following list of varieties now in general cultivation.

Bartlett (C). Fruit large; color when fully ripe a waxy yellow with red blush; flesh juicy, melting, highly flavored. The tree bears early and abundantly. August and September.

Flemish Beauty (C). A large, beautiful, melting, sweet pear. This fine old variety is still one of the most generally planted and popular everywhere. September and October.

Kieffer (C). A profitable market variety on account of its good shipping and keeping qualities; of large size and fine appearance; while not of best quality it is popular and profitable on account of the early bearing, productive habit and hardiness of the tree. A favorite for canning and preserving. Most planted in the northwest. October, November.

Worden's Seckle (C). A seedling of Seckle. Fruit medium in size, borne in clusters, juicy, fine grained with a flavor and aroma fully equal to that of its parent which it surpasses in beauty, size and keeping quality. October to December.



Kieffer.

See Page 11 for description of
Pickwick Apple.



Concord.

Grapes

The grape is an article of food as well as a luxury. Some varieties may be successfully grown in every state. In Minnesota, many of the standard grapes may be fruited, a very little attention being given to winter protection.

Plant in rows north and south eight feet apart each way in well drained soil. Trim off the top of the vine to one straight cane, plant in a slanting hole, inclining the vine in the direction it is intended to be trained upon the trellis. In this position it can be laid down more easily for winter protection. Cultivate thoroughly and grow the first season without restraint. In the fall prune off all branches and side shoots and cut the cane back to within one foot of the ground.

The following spring a stake six feet long should be set close to each vine. Permit only the strongest bud to grow. Keep all others rubbed off, while small. Tie this growing cane to the stake, and when it reaches the top, pinch off the end. The laterals or branches should also be pinched off when they have reached the second leaf. The second fall cut the cane back to four feet and cut off all of the laterals. The vine may now be buried as for the previous fall.

It will be found convenient to take out a little earth close to the vine on the side toward which it is to be bent. The following or third spring a trellis should be built.

The vine should be tied along the lower wire of the trellis. Two shoots will grow from nearly every bud. Thin these out to ten inches apart, leaving the strongest bud. When they have reached the top wire pinch off the end. Also keep the laterals pinched back leaving one new leaf at each pinching. In pruning the third fall select the strongest cane near the extremity of the vine that was tied in the spring to the lower wire, and cut it off at a length to reach the next vine on the trellis. This cane must be tied to the lower wire the next spring and will complete the permanent vine. In pruning do not cut within an inch of the bud. Bury as directed and subsequent treatment will be the same as that previously described. The fourth fall the vine will consist of a main arm extending along the lower wire to the next vine, with spurs of two buds, each ten inches apart.



Hungarian.



Campbell's Early.

Black and Purple Varieties

Alpha Grape (A.) The Alpha, a native vine, was found growing in a woods belonging to St. John's University, Collegeville, Minn., by Brother William, a member of the institution, in 1901. It was then a vine about four years old, bearing a few bunches of fine large blue grapes. Later in the season he planted it in his vineyard of wild grapes without giving it any protection over Winter. The Alpha, developed to a healthy, vigorous vine, free from mildew, bearing bunches of grapes of large size and good quality. Because of ill health and old age Brother William gave his vineyard to John B. Katzner of St. John's University, in 1907, who cut out the other wild vines and propagated the Alpha. The Alpha, being native, is a very hardy vine. Has endured every winter at Collegeville without any protection, for the last 18 years. May be planted in fall if covered with a little ground. When wood has well ripened, no danger that a cold of 40 below zero will injure it. Now growing and bearing at Thief River Falls and Stephan, Minn., 40 miles this side of Canadian line. Very prolific. First crops were 5, 10 and 54 bushel baskets. Many vines bear from 50 to 80 bunches. Normal years they change color about middle of August; perfectly ripe by 15th of September, requiring 30 to 35 days from time they turn blue till maturity. A delicious grape with a flavor not found in other varieties. Well grown bunches are more than 6 inches long.



Beta.

Red Varieties

Agawam (C). Red or maroon. Bunch usually loose. Berries large; skin thick; flesh pulpy, meaty, juicy, of a rich, peculiar, aromatic flavor. Ripens about with Concord and is a good keeper.

Brighton (C). Bunch and berries medium to large, long, compact; skin thin; flesh tender, sweet, with scarcely any pulp; and is conceded one of the best early red grapes. Should be planted with Concord, Worden, Martha or other varieties which blossom at the same time. Ripens with Delaware.

Delaware (C). This is regarded by many as the best American grape. Bunch small, compact; berries small; skin thin but firm; flesh juicy, very sweet and refreshing, and of the highest quality and flavor. Ripens with Concord or a little before.

White, Yellow and Green Varieties

Niagara (C). Bunch very large and handsome, compact; berries large, round; skin thin, tough, does not crack and carries well. Melting, sweet, with a peculiar flavor and aroma, agreeable to most tastes. Ripens with Concord.

Pocklington (C). Pale green, usually with tinge of golden yellow on sunny side; bunch and berries large, very compact; flesh juicy, sweet, with considerable pulp. Produces a heavy crop of fine, showy clusters and is very popular on the market. A seedling of Concord, ripening soon after it and considered its equal in quality.

BLACK AND PURPLE VARIETIES—Continued.

Beta (A). A hybrid of wild grape, probably crossed with Janesville, having same hardiness and general qualities of the wild grape. Has perfect flowers; may be depended upon to bear fruit when properly trained. Fine for wine, jellies, etc.

Campbell's Early (C). Bunch large shouldered, moderately compact; berry large, nearly round, covered with profuse light blue bloom; skin thick and does not crack; flesh sweet with slight aroma. Ripens very early.

Concord (B). The most popular grape in America. Bunch large shouldered, compact; berries large, covered with a rich bloom; skin tender but sufficiently firm to carry well; flesh juicy, sweet, pulpy and tender.

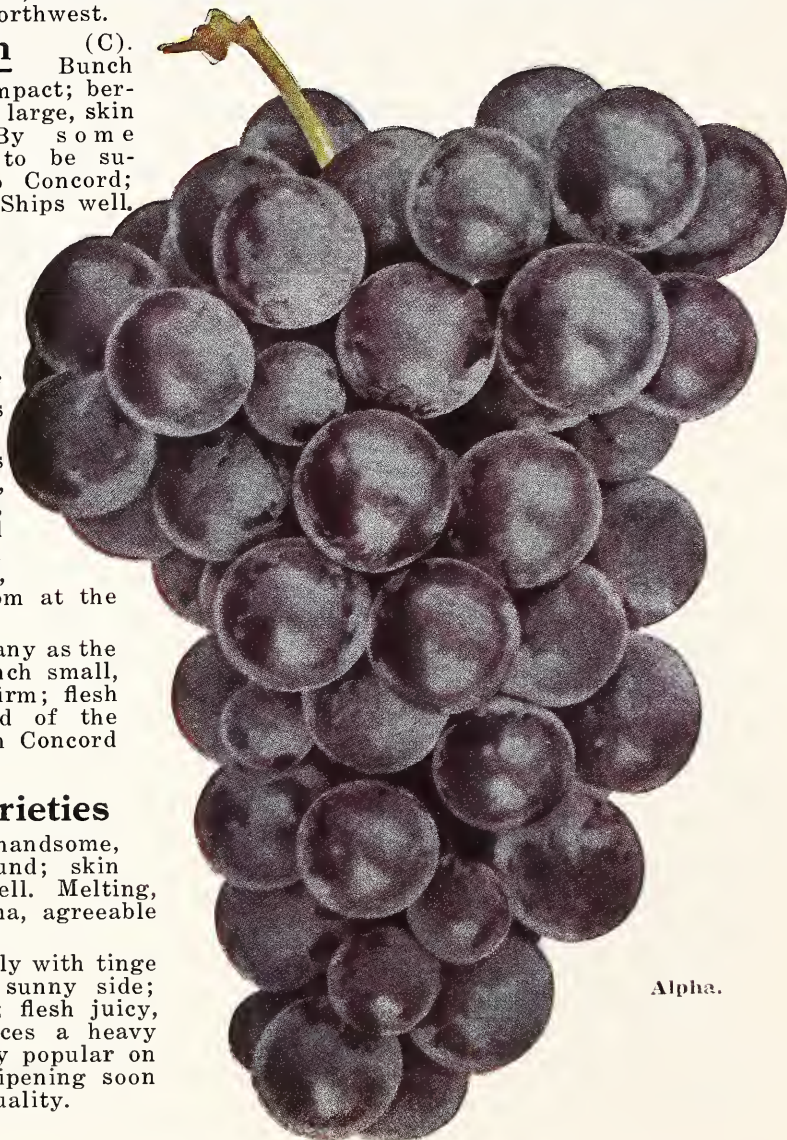
Hungarian (A). Another grape that has evidence of wild grape blood in its composition. Vigorous, luxuriant grower, and in most parts of Minnesota is successfully wintered without covering. Has proven itself sufficiently to recommend it strongly to all planters in this latitude. Fruit is larger than Beta, and therefore superior wherever it will winter without cover. Preserves wild flavor which has always made Janesville and like varieties popular. We strongly advise at least half a dozen vines of Hungarian.

Janesville (B). Has long been regarded as the hardest of cultivated grapes. Originated in central Wisconsin. Bunch medium, very compact; berry medium, skin thick; flesh pulpy, moderately juicy and highly flavored. Very strong rank grower; productive.

Moore's Early (C). Bunch large shouldered, medium to large; berries much like Concord in flavor and quality but average larger. Ripens early; nearly out of market before Concord.

Wild or Frost Grape (A). A vigorous tall climbing species, with bright green foliage. The leaves are thin, medium to large, the edges deeply toothed. They ripen late, even after frost. This is probably the most wide spread of American native grapes and, with its varieties is the most often found in the woodlands of the Northwest.

Worden (C). Bunch large, compact; berries very large, skin thin. By some thought to be superior to Concord; earlier. Ships well.



Alpha.

Raspberries

The Raspberry is a valuable and easy grown garden fruit. It is successful in most northern states and unsurpassed either as a fresh fruit or for preserving. Plant in rows seven feet apart and three feet in the row. In the north it is best to plant both Raspberries and Blackberries a little below the level so that they can be covered easily in the fall. Cultivate thoroughly, and when the young shoots are fifteen or eighteen inches high, pinch them off, thus causing laterals to push out. In the spring cut these back to twelve or fifteen inches. When the fruit is gathered cut out the old and weak canes.

Winter Protection. To protect Black Raspberries in winter, commence at the north end of row, remove the dirt from the north side of the hill about five inches. Gather the vines together with a fork and with the foot gently press the root to the North, laying the vines flat on the ground, then cover with a few inches of earth. It is best for two persons to work together, one to lay the vines over and the other to cover them. In spring remove covering carefully with fork. Red Raspberries do not need winter protection.

Planting. Set plants three feet apart with rows six feet apart. Roots should be spread apart carefully and soil packed in thoroughly and firmly between them.

Cultivation. Keep soil loose and free from weeds, which can be easily accomplished with garden hoe or hook. This is especially important during a dry time.

Pruning Red Raspberries. Pinch off all fruit blossoms the first summer and do not allow more than two canes to grow up that season; these two should be pinched back when about eighteen inches high, to produce more of the lateral shoots upon which the fruit buds are borne in great profusion. These will fruit the next season, and as soon as the berries are picked, cut canes off close to the ground. After the first year a lot of suckers will spring up from the roots; all but four or five of these nearest the hill should be cut down so as to throw the growth into the few canes thus saved. After these have fruited, cut them down and proceed as before.

Pruning Black Raspberries. The treatment of black-cap varieties is identical with that given the reds, excepting that in the spring, the lateral shoots which have been produced by pinching the canes eighteen inches above the ground should



Loudon.

themselves be pinched back about the same distance; otherwise they will grow out slender and too weak to bear the fruit.

Mulching. No mulching needed the first year. Second season mulch two feet all around plant with cut grass, straw or litter. Too much stress cannot be laid upon the importance of mulching Raspberries as it keeps the land moist, the berries clean and kills out weeds.

Red Varieties

Cuthbert (Queen of the Market). (B.) Canes tall, vigorous and enormously productive. Berries medium large, and a good shipper; flavor rich and of good quality.

Herbert (A.) Very hardy; produces heavy crop of most delicious fruit. Berry large; bush thrifty; of recent origin. Has been awarded many medals. Does well where other varieties fail.

King (B.) Many leading fruit growers consider this one of the best of the early red raspberries. Berries large and attractive, bright red in color and of good flavor. Ripens with the earliest and is firm enough to ship well. The canes are healthy and productive. Very hardy.

Loudon (B.) Its large and beautiful, productive, rich, dark crimson berries are of fine flavor and quality. Ships well, and vigorous in growth.

Marlboro (B.) One of the largest early red raspberries. The berries are a beautiful red scarlet and of good quality. Canes are vigorous and productive. A standard variety.

Miller (B.) Bright red berries, averaging large, round in shape and of fine quality; one of the firmest and best shippers for early market and is grown extensively in many sections.

Minnetnoka (Ironclad). A. Originated near Minneapolis. In that and other localities is a great success. Said to be heavy bearer; fine quality; good shipper; hardy.

Minnesota No. 4 (A.) Best Red Raspberry in northern market. A successful cross, produced by Minnesota Plant Breeding Station. Possesses long sought combination of hardiness, with size and quality of fruit. Heavy fruiter, annual bearer. Luxuriant in fruiting canes.

Sunbeam (South Dakota). (A.) Originated by Prof. Hansen of the Experimental Station, Brookings, S. D. Said to be the most hardy red raspberry grown. Very heavy foliage; is a shy bearer; quality fair; medium size. Not desirable where other and better sorts can be grown.



Gregg.



Minnesota No. 4.

RED VARIETIES—Continued.

St. Regis (A). Red, good size, sweet, fine flavor, flesh firm and meaty. The canes are of stocky growth with dark green leathery foliage. Does not suffer from sunburn or scald. Splendid drought resister and hardy even in the most arid sections of Montana. Bears very heavy in the regular Red Raspberry season and will continue to fruit throughout the summer.

Black Varieties—"Black Caps"

Cumberland (B.) Very large and very similar to Gregg in quality and firmness. In productiveness it is unexcelled.

Gregg (B.) One of the oldest and best known black caps and is still one of the most largely planted varieties. In size the fruit averages large and regular crops are to be depended upon. Under good cultivation yields enormously. It is an excellent shipper and commands a good price on the market.

Ohio (Early Ohio). (B.) Very productive and for canning or evaporating one of the most profitable. Berry not quite as large as Gregg but of fine quality.

Older (B.) A recent variety which has been receiving considerable attention in the Northwest. Ripens a trifle in advance of Gregg. Jet black, sweet, excellent quality. Adheres well to bush.

Purple Varieties

Columbian (B.) At this time regarded as the best variety of the class. Very large, dull purple when fully ripe and moderately firm. It is an improvement on Shaffer in color and firmness of berry while retaining its delicious flavor. The bush is very vigorous and grows to such great size that it should have extra room. Unexcelled as a market berry and valuable for all culinary purposes.

Yellow Varieties

Golden Queen (B.) Seedling of Cuthbert and fully equal to that variety in vigor of bush and productiveness. The fruit is large and of excellent quality; color, pure golden yellow which makes it very attractive when served alone or mixed with red berries of other varieties. Ripens with Cuthbert; firm and a good market variety.



Columbian.

Blackberries

The Blackberry is a native fruit in all the Northern States. The following cultivated varieties are improvements over the wild berry. Most of them are larger and sweeter. It is one of the hardiest garden fruits in the catalog.

Ancient Briton (B). A reliable market variety of medium size and of best quality. One of the hardiest. Berries large and sweet. Sells well on the market and is a profitable variety. Of the best known and most planted varieties in the North Central States.

Badger (B). Very prolific; is a vigorous grower. Fruit excellent quality; desirable, one of the best.

Eldorado (B). Of late introduction, being vigorous and hardy in most localities. The berries are large, coal black, flavor sweet and melting and have no hard core. Very firm and therefore an excellent market variety.

Rathbun (B). The berries are sweet, very large and luscious, have no core, yet are firm enough to ship and handle well. Forms a compact bush; very productive where hardy.

Stone's Hardy (B). The canes are upright; berries are of medium size, juicy, sweet, of fine flavor and good quality. For either market or domestic use. Stone's Hardy is a dependable variety. Its hardiness will always hold for it a place in the estimation of the northern planter.

Snyder (B). Also one of the best blackberries for market in the North and in hardiness second to none. The canes are vigorous and annually productive. Though the berries are medium in size, they are very sweet, juicy and of superior quality. It also lacks the hard core found in some varieties.

Dewberries

The Dewberry is a dwarf, trailing form of the Blackberry. Where it is grown successfully, the Dewberry is highly prized on account of its low growing habit. Is easily covered for winter protection.

Lucretia (D). One of the most widely planted of the Dewberries. It is a strong grower and exceedingly productive. The fruit is large, luscious and handsome; glossy black. Ripens middle of July according to locality.

Windom (D). This variety is the one mostly planted in the North Central States where it has proved to be the most hardy. It is very handsome when in blossom. The fruit is superior for cooking, canning and preserves; and if left on the vine until well ripened is one of the best for dessert and will hang on ten days or more after turning black.



Downing.



Eldorado.

Gooseberries

A deservedly popular fruit, for winter consumption. Set in rows six feet apart, four feet apart in the row; cultivate clean. The currant worm is practically the only enemy of the American varieties of Gooseberries. Watch plants as soon as leaves start and begin spraying with Paris Green whenever the worms show signs of working. No spraying should be done within two weeks before picking fruit.

Carrie (A). Originated in Minnesota. Fruit red. After the third year, bush loses its thorns; very heavy bearer, medium size; excellent quality.

Downing (A). A seedling of Houghton. Large and handsome, pale green berry; of splendid quality for dessert or cooking. Bush vigorous and exceedingly productive. Excellent for family use and profitable for market.

Houghton (A). An enormously productive and always reliable, old variety. Of vigorous growth, slender and spreading, not subject to mildew. Fruit of medium size, smooth, pale red, tender and of good quality.

Pearl (A). Similar to Downing but fruit generally reported a little larger. Said to be a cross between an English and American variety. Very hardy; free from mildew and productive, even more so than Downing. Superior in size and quality.

Red Jacket (Josselyn). (A.) Bush is very hardy, clean, healthy foliage, vigorous and entirely free from mildew. Fruit large, smooth, red and of first-class flavor.

Transparent (A). A strong and vigorous grower of superior quality. A popular variety in the north. Free from mildew. Season medium; size large.

Currants

The currant is an indispensable garden fruit. It is very largely planted all over the north, and owing to its early ripening season, it is grown successfully as a commercial fruit in all sections.

Care. Use the same care in preparation of the soil and planting that is advised for trees. Currants should have manure in abundance. Plant in rows, north and south, six feet apart, and four feet apart in the row. In the spring prune off the old wood close to the ground, and as the fruit is grown on the last year's growth of wood, they can be kept thrifty and healthy by this means. For destroying Currant worms, see directions given under Gooseberries.

Red Varieties

Cherry (A). Bush vigorous, stocky and compact; cluster rather short, fruit medium large; color bright red; very thin skin; juicy and fine flavor; one of the most productive.

Fay's Prolific (A). Berry averages large; juicy and less acid than Cherry; bush not quite so strong a grower.

Long Bunch Holland (A). One of the best late varieties; bush vigorous and hardy; clusters very long; berry medium to large, bright red and of good quality.

London Market (A). Bush vigorous, upright; fruit medium to large; color dark red, with sprightly acid flavor; very productive.

North Star (A). Popular on account of its hardiness, vigorous growth, early fruiting and productiveness. Fruit is borne on naked stems which makes easy picking.

Perfection (A). The latest introduction, being a cross between Fay's Prolific and White Grape, combining the best qualities of both. Berry bright red and large. The clusters average longer and the size of berry is maintained to the end of bunch. In quality it is said to be superior to anything in the market today, being of a rich, mild, sub-acid.

Prince Albert (A). Bush vigorous, very upright in habit. Clusters short to medium. Berries large, red, with thin skin; juicy and of high flavor. Immensely productive. A late variety, highly valued at canneries because of its good size, thin skin, flavor and juiciness. Makes fine jelly.



Perfection.

Red Dutch (A.) An old and well known standard variety. Bush is a strong, upright grower and productive everywhere.

Wildier (A). A remarkable variety. Very productive; bunches and berries large; splendid quality. Superior in every way to the common sorts.



White Grape Currant.



Cherry Currant.

White Varieties

White Grape (A.) Bush vigorous, somewhat spreading, productive; clusters long; berries large; of very attractive color, mild flavor and good quality; a good table variety.

Black Varieties

Lee's Prolific (A.) An old and always popular English variety. The bush is short, robust and enormously productive; berries average large; acid and of good quality for cooking; one of the hardiest.



Senator Dunlap.

varieties near them, either mixing them or plant three rows of pistillate, then one of staminate. The staminate variety furnishes the pollen which fertilizes its own and the blossoms of the pistillate plant.

Cultivation. This should be done once a week. Use a small-tooth, shallow cultivator, and when the runners start, direct them so as to fill all vacancies and form a bed one foot each side of the row; this will leave a walk two feet wide. It is best to cultivate one way only so as

not to double the runners back and break them.

Protection. In the fall when the ground is first frozen, cover it with three inches of marsh hay or clean straw. In the spring rake the covering into the paths and around the plants to keep the heavy rains from washing dirt onto the fruit. Pull out all weeds that start.

Summer Care. Immediately after fruiting mow off the tops of the plants, rake them, with the straw, off the beds and burn them; then with a sharp plow turn over the edges of each row, into the paths, leaving a strip of plants six inches wide. Cultivate and grow new plants as before for the next year's fruiting. After two crops of fruit plow up and set a new bed. It does not pay to keep an old and matted bed.

Bederwood (Perfect). (A.) This is generally considered one of the very best varieties for profitable culture in the West. Is valuable either for home use or market. The fruit is large, round-conical, bright scarlet, moderately firm and of fine quality. The plant is vigorous and immensely productive. A valuable early variety and conceded by growers as one of the best to plant with Warfield and other imperfect varieties of the same season.

Senator Dunlap (Perfect). (A.) One of the great market berries.

Has now been well tested and proven wonderfully prolific and profitable everywhere. Plant resembles Warfield, is a rampant runner and should be restricted. One of the best in dry seasons. Fruit medium to large, regular in form, color bright, beautiful red, glossy; exceptionally firm, making a splendid keeper and shipper. Quality first-class; ripens early and continues a long time. Midseason.

Warfield (Imperfect). (A.) A seedling variety discovered in 1883 and is still one of the most largely planted strawberries. Plant is a vigorous grower with long penetrating roots, and is thus a great drouth resister. In appearance, much like Senator Dunlap and had no rival until the introduction of that variety. It is very largely planted with Bederwood as a fertilizer. The plant is smaller than most other well known varieties. Midseason.

Strawberries

The Strawberry is perhaps the most popular small fruit cultivated in the North. As is well known, many of our best varieties of Strawberries have imperfect or sterile blossoms. For this reason, when planting such varieties it is necessary to alternate them with staminate or perfect varieties in order that the blossoms may become fertilized. In the following list, the buyer will therefore find such varieties designated as either perfect or imperfect. In our list we have aimed to include those varieties that by actual test have proven the most valuable in average locations.

Location. Any well fertilized and well cultivated land will grow strawberries. A northern exposure is thought to be a little less liable to injury by late frosts in the spring.

Distance to Plant. In small gardens a good way is to plant them in hills eighteen inches apart. For commercial culture in fields and where they are to be cultivated with a horse cultivator, plant in rows four feet apart and one foot in the row.

Preparing Plants and Planting. Cut off the stems leaving one or two of the smallest leaves and cut off the roots, leaving about four inches; this should be done in the cellar or a cool, shady place. Have a pail or box of rather thick mud and mud the roots, placing them in a shallow box, tops out. If it is a dry, windy time set them in the cellar and wait until just before a rain for planting. Set them firmly. In setting pistillate (imperfect) varieties be sure and set staminate (perfect)

EVERBEARING STRAWBERRIES

Progressive (A). For some time past we

have been recommending the new Everbearing Strawberries as a fruit for the family garden without knowing exactly what they would yield. On the first of May, we put out in our back yard one square rod, carefully measured, of the Progressive, setting the plants in rows twenty inches apart, ten inches apart in the row. The bed was kept clean and the runners and blossoms cut. About the first of July we mulched the ground between the rows with lawn clippings, which kept down the weeds for the rest of the season. The tenth of July we stopped cutting the blossoms, allowing the strength to go to the fruit. From then on we had little work with the runners. In the midst of the fierce drouth of July we watered the bed thoroughly about five times. This sums up the care and time put into the bed. On July 23rd, eighty-three days after setting, we began to pick berries. Every picking was carefully weighed and recorded at the time with the following results: July, 56 ounces; August, 432 ounces; September, 444 ounces; October, 413 ounces. Eighteen make a quart, dry measure. The total picking for the ninety days thus amounted to 74 $\frac{3}{4}$ quarts, or something over two and one-third bushels of fruit, an average of five-sixths of a quart per day.

Juneberry

(A.) The Juneberry is a desirable fruit in the Northwest. The well known Dwarf Juneberry found indigenous in the latitude of Minnesota is prized by all who are familiar with it. An improvement on this has now been made and we have a variety known as the "Success" which maintains the characteristic hardness of the native variety and has a much larger and finer flavored fruit. In order to keep these pure, we graft them on hardy crab roots. The flowers of the Juneberry appear about the same time as the apple. Its leaves are large, glossy green and very handsome. It is also valuable for ornamental purposes and is much used by northern landscape gardeners in groups of shrubbery. The fruit is round, of a beautiful reddish purple which becomes a bluish black when fully ripe. In flavor it is somewhat similar to the Huckleberry; mild, very rich, sub-acid. When thoroughly ripe it is excellent served with cream and sugar. It is also valuable as a canning berry for winter use and makes splendid pies. It is extremely fruitful and regular in bearing. May be depended upon to produce a good crop annually. Perfectly hardy; needs no protection or special treatment.

Asparagus

The Asparagus is one of the oldest and one of the most delicious of our garden varieties. A small bed in the kitchen garden will supply the family with this early spring vegetable in a fresh condition impossible to procure on the market. Asparagus is a gross feeder. To make a good bed in the garden throw out eighteen inches of the top soil and fill in with the richest well-rotted manure, then cover with six inches of good soil. In this set the plants two feet apart. Keep the plants clean and in the fall cover with twelve inches of well-rotted manure. In planting a large bed for market gardening, mark rows and turn a "dead furrow" for plants. Rake lumps down to make a good bed for roots. Set plants and hoe about three inches of loose earth over them. Late in fall cover entire bed with four to six inches of well-rotted

Palmetto Asparagus.

manure. Near Minneapolis seven-eighths of an acre planted in this manner produced \$300.00 worth. If good care is taken and the manure dressing is put on every year, the bed becomes annually more productive. A stringy, spindling growth always shows lack of manure.

Conover's Colossal

(A). Is probably the best known as it is the oldest named variety under cultivation. It is still said to be the most reliable in some locations as it is very vigorous and keeps the bed full of strong shoots.

Palmetto

(A). Is no longer a new variety. Where well grown, with proper mulching, it produces shoots of large size and exceptionally tender. Delicious in quality.

Rhubarb

A valuable early spring vegetable, the use of which is universal. The following are the best varieties now in cultivation. Rhubarb does well in any good soil. Set the plants three by six feet apart and cultivate well until the plants are thoroughly established. Put on a little well-rotted stable manure each winter.

Excelsior

(A). A long growing and tender variety, with tender skin. Especially valuable for preserving.

Linnaeus

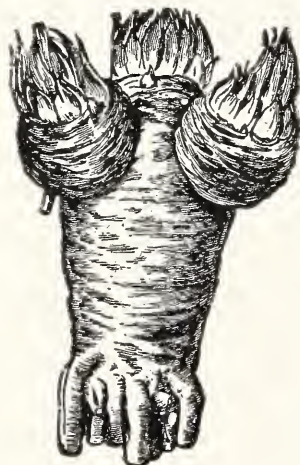
(A). One of the oldest and best known varieties; vigorous and productive.

Sweet Wine

(A). A later improvement on Linnaeus. A strong grower and very tender; of splendid flavor.

Horseradish

(A.) This popular plant was introduced to this country from Great Britain at an early date and its cultivation forms an important industry in many sections too well known for further descriptions. We offer strong roots which should be planted in the spring.



Horseradish.

Rhubarb.

Lawn and Street Planting

Where it becomes necessary to plant specimens in a gravelly or very sandy spot, a good sized hole should be dug and filled with loam, in order that the roots may have a good bed in which to start. Cultivation cannot of course be practiced in lawn planting, and for that reason other means must be employed to provide and conserve moisture during seasons of drouth. The basin being left around the tree or shrub and the sod removed, a mulch of coarse manure, straw or cut lawn grass should be kept on the bare ground thus left to keep the surface moist and mellow. Each spring this mulch should be removed, the surface lightly spaded and the mulch then returned or renewed. For a uniform appearance the lowest branches on street trees should be the same height from ground; to accomplish this first determine the height desired (usually about seven or eight feet) and then prune side branches up to that distance; in pruning these, cut carefully and close to body of the tree, so that the wound may be absorbed by the bark of the trunk and not leave a stump. Specimen trees and shrubs on the lawn need only such pruning as is necessary to keep them in good form.

Landscape Effects. The arrangement of the grounds surrounding a dwelling is nowadays considered nearly as important as the arrangement of the dwelling itself. People no longer build houses close up to the side-walk, but put them back in the lot as far as possible, so that the building may have a proper "setting" in the grounds. The greensward, with a proper arrangement of trees and shrubbery, is quite as important



Before Treatment.

to the appearance of the house as its architecture or paint. To obtain this desired effect, convenience and practicability must be considered in the location of walks, driveways, etc., but at the same time these arrangements need not conflict with the artistic element. A harmonious blending of the two is what should be sought.

The Two Styles. There are two general styles of landscape designs, known as the Artificial and the Natural. The Artificial places everything on the grounds either in straight lines or geometrically correct circles, trees and shrubs are trimmed to a uniform shape and size: this style was once much in favor but it is little employed now except where an "old-fashioned" effect is the especial object. The Natural planting of grounds seeks to copy Nature in her most beautiful forms, and gives by far the best setting to the home.

Natural Planting. Strangely enough it is far simpler for the amateur gardener to plant his grounds by the Artificial method than by the Natural

for, while the former may be accomplished with comparative ease by laying out the area in squares, rectangles and circles, placing a straight row of trees here, flanked by a straight row of shrubs there, the Natural method brings into the design irregular curves, mixed plantings of shrubbery that will harmonize, massed groups where the effect is pleasing, with open lawn where a pretty vista will result or where utility demands. The general effect of a Natural planting is expressed in two words, harmony and simplicity.

We are in position to offer expert help to such of our patrons as are interested in a general Landscape scheme. We can either send our Landscape Architect out to inspect the grounds and make the suggestions, or we will submit a plan drawn from information our patrons are able to send us.



Photograph of above Eighteen Months after Planting.

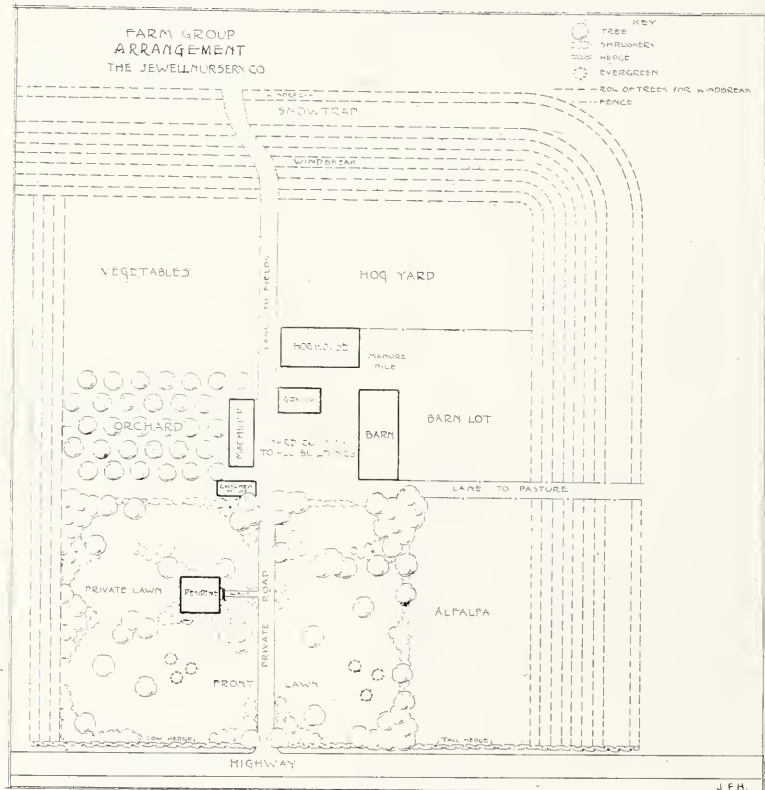
The Shelter Belt—Farm and Prairie Forestry

We place these two features of tree planting under the same section because they both work to the same end. In places where it is not desired to grow forest stock for the sake of the timber as well as the protection it affords, it may, however, be necessary to grow a belt of trees for protection of the orchard, farm yard or other features of the premises. For such cases we recommend the use of evergreens or of evergreens and deciduous trees combined. The general desirability of planting trees solely for wind protection is briefly outlined in the following paragraphs. It is hardly necessary for us to say that these arguments are not "manufactured" by us as a means of selling trees; they form the condensed opinion of a large number of practical farmers and fruit growers, and gleaned from the reports of various western horticultural and agricultural societies and experiment stations.

The Fruit Garden and Orchard, to be an annual success, must have protection from both the cold winds of winter and the hot, dry winds of summer. The root system of all fruit stock with few exceptions is "surface feeding." That is, the large part of the roots remain in the top soil instead of having penetrating tap-roots like the oak and many other native trees. For this reason, the tree or plant is quickly affected by temporary conditions in the top soil, and to make the home garden produce annual crops with a minimum of failures, the soil condition must be maintained in as normal degree as possible. Garden vegetables are also surface feeders, and as these are nearly always combined with the fruit garden, a provision made for the success of one will have an equal effect on the success of the other.



Evergreen Windbreak.



Model Farm Arrangement.

Early vegetables, like early fruits, have need of a tempered atmosphere, and thrive best during the first weeks if protected from the wind.

The Farm Yard. That wind protection for live stock is an absolute necessity is demonstrated conclusively by the actual experience of thousands of farmers in Minnesota and the Dakotas alone. Experts in stock-raising all agree that nothing is more disastrous to horses, cattle, sheep and swine than to allow them to run for exercise in yards that are exposed to chilling winds. Milch cows increase from 15 to 25 per cent in their daily milking when protected from cold drafts, while it has been repeatedly proven that hogs can be fattened with far less feed if the pens are sheltered. Distemper, a much dreaded disease with both horses and sheep, is due largely to exposure in yards and run-ways. Poultry must have out-door exercise in the winter, and this, when given in cold and windy yards, is not only the cause of the fatal roup, but is also injurious to laying hens.

Cultivation. Cultivation of the grove should be commenced shortly after planting, and be repeated often enough to keep the top three inches of soil loose, so as to form a dust blanket to retard evaporation during dry weather. The soil should never be allowed to become baked hard after a rain, but the crust should be broken up with a cultivator as soon after a rain as it can

be worked. Cultivation should be discontinued after the 1st of August, in order to encourage early ripening of the wood. The weeds that grow after this time of the year will do no harm. Late in the autumn, the first year or two after planting, the soil should be turned towards the trees with the plow, to protect them.

Clear Plantings. Most of the plantings on our prairies consist wholly of one kind. In some cases good results are thus obtained, but they are seldom as satisfactory as plantings made up of several different kinds. One of the greatest drawbacks to plantings made up entirely of one kind is the fact that drought, insects or fungus disease may destroy the whole planting at one time, while in a judiciously mixed planting this could hardly occur.

The Advantages of Mixed Plantings. 1. Makes it possible to grow rapid-growing species that form a protection in the least possible time and still have coming on, in the same grove, longer lived and better kinds to take their places. 2. Many kinds that are somewhat tender when young are helped very much by being grown among the hardier kinds until well established. 3. In good mixed planting the ground is more likely to be properly shaded than it would be in clear plantings of thinly leafed species. 4. Mixed plantings are most interesting and ornamental.

The plan of planting the forest lot with a view of providing some food for birds is not mere sentiment, for they protect our gardens from



Cross Cut of Windbreak Showing the use of Willows for Snowcatch and open space for Snowtrap.

many insects, and, if we furnish an abundance of Russian Mulberry and Juneberry, they will not trespass much on our strawberries or raspberries.

Protection to Buildings may be furnished by a few rows or a grove of trees. It is generally best to locate the buildings in a grove, or grow one up around them, so that protection may be afforded from every quarter to the best advantage. The garden should also be included in the grove or shelterbelt about the buildings.

Protection to Crops by Windbreaks. The protection of the windbreak may give a much needed covering of snow to crops on the leeward side. The protection from dust storms and drying winds is also an important advantage. Prof. Budd says that on the plains of Russia, where the climatic changes are much the same as in this section, the use of low windbreaks in wheat fields is very common. Our crops in this section are most liable to injury from the southwest winds of summer, which dry them out, and the northwest winds of winter, which blow the snow from the land, depriving it of its protection and moisture. The same winds are also the most uncomfortable to the occupants of farm buildings, and are most likely to be followed by dust storms.



Or this?

Does your home look like this?

Deciduous Trees

So varied are the purposes to which are put the shade and ornamental trees, and so widely different in character are the trees themselves, that it is difficult to adopt any system of cataloging that will be a safe guide in all sections of the country. This is not only true as regards hardiness but also as regards height and general behavior. The most of the varieties we list are hardy and successful in the latitude of Minnesota; in fact many of them are natives. Others, however, are only semi-hardy in this section although they are often successful in retired or protected location.

As to height, we have adopted the following broad classification which will give a fair idea of the comparative size of the different species listed.

Lg. Trees usually attaining a height of fifty feet or more at maturity.

Med. Trees usually less than fifty feet and more than twenty-five feet at maturity.

Sm. Trees commonly less than twenty-five feet at maturity.

Ash - *Fraxinus*

White Ash (*F. Americana*). (B). Lg. A well known timber tree. It attains a large size and is of great value for timber. A good street tree in many sections, is a rapid grower. It produces a broad, round head and has a straight clean trunk. While young, its foliage has a remarkably soft and mellow appearance.

Green Ash (*F. lanceolata*). (B). Lg. This species is of the greatest value in the prairie states of the Northwest. Although not so tall a grower nor so rapid in growth, it is much hardier and better adapted to the extreme conditions of this section. It is valuable for street planting as a shade tree and for all kinds of prairie timber culture. Somewhat resembles *F. Americana*. Grows very fast when young and before it produces seed, after which its growth is slower.



Green Ash.

Birch - *Betula*

The Birches number among them some of our most beautiful and useful native trees. They are indispensable in park and lawn planting, and are also receiving more and more attention for street uses. It is primarily a tree of the North; in fact, no trees grow farther North than the Birch.

American White Birch, Poplar Birch (*B. populifolia*). (B). Med. A small or medium sized, graceful tree. Thrives well in even poor and dry soils. The bark is a grayish white.

Weeping Cut-Leaf Birch (var. *pendula laciniata*). (A.) Lg. This magnificent tree is, without question, the most popular and the most planted of all pendulous or so-called weeping trees. It is a tall, slender tree, yet of vigorous growth. It has an erect central trunk, somewhat pyramidal in shape with graceful, drooping branches and white bark on all the old wood. The foliage is fine, thin, deeply and delicately cut; and of a beautiful shade of green.

Box Elder - *Acer*

Box Elder, Ash-Leaved Maple (*A. Negundo*). (A.) Med. to Lg. This tree is almost too well known in the west to need description. It has probably been more planted in the treeless portions of this country than any other, with possible exception of the Cottonwood. Its vigorous growth and tenacity give it unequaled advantages in dry or exposed locations, such as are common in the Northwestern States.

Butternut - *Juglans*

Butternut, White Walnut (*J. cinerea*). (B.) Lg. Very much resembles the Black Walnut. It is a moisture loving tree and succeeds best on low rich soils. The nut is of milder and considered by many, of better quality. A broad, open top tree, with light green compound foliage and gray bark.



Weeping Cut-Leaf Birch.

DECIDUOUS TREES—Continued.

Catalpa

Western Catalpa (*C. speciosa*). (C.) Med. to Lg. This is a very desirable ornamental tree, closely allied to *C. bignonioides* but taller and much hardier. Its blossoms open two weeks earlier. It has large, luxuriant foliage, eight to twelve inches long. The flowers are borne in showy panicles. The most valuable tree known when planted for commercial purposes. A thick, rough-barked tree of soft, white wood. The wood is largely used for fence posts, railroad ties and telegraph poles. The value of the plantations of this wood in Kansas is estimated by the United States Department of Forestry to be from \$300 to \$400 per acre.

Crab - Pyrus

Pyrus ioensis (var. Bechtel's Flowering Crab). (B.) Sm. One of the most ornamental varieties in the Pyrus group, and also one of the hardiest. Originated in Iowa. It is a better grower than the parent type, with good foliage. The flowers are double and very beautiful. They are a delicate blush or shell pink color and highly perfumed. This variety should appear in every collection where it is hardy.

Elm - Ulmus

American White Elm, Water Elm (*U. Americana*). (A.) Lg. One of the most largely used trees for street planting and as a shade tree for lawns and parks. Is the most characteristic tree of this region and one of the most beautiful. Its habit is at once majestic and graceful, and the wide spreading tree, borne usually at a considerable height on a straight and shapely trunk, affords ample shade and shelter.

Weeping American Elm (var. *pendula*). (A.) Med. A picturesque type of irregular growth with pendulous branches, more pronounced in their drooping habit than *U. Americana*. Should not be confused with the Camperdown Weeping Elm which is more pendulous and more uniform.



American Elm.

Hackberry - Celtis

American Nettle Tree (*C. occidentalis*). (B.) Med. A rare native tree, with wide spreading head and numerous slender branches. The bark is thick and rough. The leaves are about the size and form of the apple tree, but more pointed and of a bright, shining green. In general appearance it very much resembles the Elm.

Larch - Larix

European Larch (*L. decidua*). (C.) Lg. An upright, conical grower, in general form resembling the Spruce, and one of our most beautiful lawn trees. In the summer when it is covered with its new, soft, feathery, light green foliage, it is strikingly beautiful. Again in the autumn it is very beautiful as its needles turn a golden color before falling.

Locust, Black - Robinia

Black Locust (*R. Pseudacacia*). (B.) Med. A well known and very ornamental native tree, with compound leaves and graceful, spreading habit. The pea-like flowers are borne in drooping racemes, white and fragrant. These are followed by two-valve, bean-like seed pods. It is a rapid growing, vigorous tree, giving ornamental effect soon after planting.

Linden, Basswood - Tilia

American Linden, Basswood (*T. Americana*). (B.) Lg. A well known, stately tree with large, heart-shaped leaves of a pleasing green color. A vigorous grower of pyramidal habit when young but eventually a large, round headed tree. A valuable lawn tree and should be more used for this purpose.

European Linden (*T. ulmifolia*). (B.) Med. The leaves are small, thin, cordate, green above and silvery beneath. It is in every way a distinct and desirable ornamental tree, particularly adapted to small grounds.



American Linden or Basswood.

DECIDUOUS TREES—Continued.

Maple - Acer

Ginnala Maple (*A. Ginnala*). (B.) Sm. A graceful, shrub-like tree with handsome foliage which turns to a bright red in autumn. One of the most beautiful and brilliant of autumn coloring trees, and is much used as a substitute for the Japanese Maple where that is not hardy.

Norway Maple (*A. platanoides*). (B.) Lg. A fine and handsome tree from Europe, with round, spreading head. The leaves turn a pale yellow in autumn, often highly colored, especially in the case of some of its varieties. In the milder sections this rivals the native Hard Maple as a street tree.

Silver Maple, Soft Maple (*A. saccharinum*). (B.) Lg. A well known ornamental tree, with wide spreading, slender branches. Has been much used as a street tree. If exposed to severe wind, the limbs are often broken in the crotches; but this may be largely overcome by occasionally "heading in" the branches and retaining the central shoot as much as possible. It is valued for windbreaks on account of its quick, upright growth.

Sugar, Hard or Rock Maple (*A. saccharum*). (B.) Lg. A beautiful and always popular tree, growing on a smooth trunk and forming a dense, oval head. The foliage is large and handsome and of a rich pleasing green, turning to beautiful shades of orange yellow and red in the autumn. In soils where it is thoroughly at home, it makes a splendid and uniform street tree, and adapted to nearly all kinds of soil.



Soft Maple.

MAPLE—Continued.

Wier's Cut Leaved Silver Maple (var. *Wieri*). (B.) Med. This distinct variety is one of the most beautiful of our hardy trees, having cut or dissected foliage. Its growth is rapid, the shoots slender and drooping, giving it a habit almost as graceful as the Cut-Leaved Birch.

Mountain Ash - Sorbus

American Mountain Ash, Dogberry (*S. Americana*). (A.) Med. A compact, oval headed tree, with dark green, compound foliage and showy clusters of bright red berries. It is very similar to *S. Aucuparia* but of coarser growth.

European Mountain Ash, Rowan Tree (*S. Aucuparia*). (B.) Med. A round headed tree, twenty to forty feet high and occasionally more. It is ornamental all through the season. Its compound, pinnate foliage is soft and handsome in appearance and of a fine shade of green. In May and June the trees are covered with the large flat heads of pure white flowers, four to six inches across. These are followed by clusters of bright orange and red fruits which remain long after the frost has denuded it.

Oak-Leaved Mountain Ash. (B.) Sm. A hybrid variety of very distinct habit. Is a very handsome lawn tree, of dense, pyramidal form. The leaves are different from the other Mountain Ashes, being entire instead of compound; dark green above and tawny beneath, deeply lobed at the base, sharply toothed toward the apex.

Weeping Mountain Ash (var. *pendula*). (B.) Sm. The best tree of the extremely pendulous type for the North. The fruit and flowers are identical with *S. Aucuparia*. In habit, however, it is decidedly drooping, the branches taking in almost directly downward growth.

Mulberry - Morus

Russian Mulberry (var. *M. alba Tartarica*). (C.) Sm. As commonly seen, it is a low growing, bushy topped tree, with small and much lobed leaves. The foliage is very successfully used as food for silk worms.



Oak Leaved Mountain Ash.

DECIDUOUS TREES—Continued.

Oak - *Quercus*

Burr Oak, Mossy Cup Oak (*Q. macrocarpa*). (B.) Lg. One of our finest, native, ornamental Oaks, and a magnificent tree in every location.

Pin Oak (*Q. palustris*). (B.) Lg. Of late years has been much used in the East for avenue planting. The leaves are deeply pinnate, sometimes almost to the midrib. It is a fibrous rooted tree and transplants well. Branches are rather short and spreading, forming a symmetrical, pyramidal head, though more irregular as they become older.

White Oak (*Q. alba*). (B.) Lg. A beautiful park tree where space can be allowed for its full development. It has stout, spreading branches which form an open head. The bark is light gray.

Poplar, Aspen - *Populus*

The Poplars are a very important class of trees, especially in the prairie states of the Middle West where their rapid growth makes them popular for many purposes.

Mule Tree. Originated at Antelope Lake, North Dakota, discovered first at old Boots farm near Cathay, where the original grove planted by Boots is still intact. Trees can be found here two feet in diameter. Upright growing, healthy and clean. It is not as fast a grower as its cousins, the Balm of Gilead and the White Poplar, but it combines the best characteristics of both and is the only real hardy Poplar of



Weir's Cut Leaf Silver Maple.

POPLARS—Continued.

today. Prof. Waldron claims it is a natural cross between the Balm of Gilead and the White Poplar. Its popularity is rapidly increasing and all through western North Dakota it is being tested with immense success. The dry years of 1917, '18, and '19, did not seem to phase it at all, demonstrating that it has the main qualities so essential for the west and ability to withstand drought.

Balm of Gilead (*P. balsamifera* var. *candicans*). (B.) Lg. A good street tree and it is probably the best of the Poplars for the shade. Well grown trees have the darkest and richest foliage of any common Poplar and this character makes the tree valuable in heavy groups about the border of a place.

Canadian Poplar (*Canadensis*). (A.) Lg. This Poplar is related to the hardy Cottonwood—resembles it somewhat in its habit of growth. It is extremely hardy. It grows as far north as Edmonton in northern Alberta. The tree is especially adapted to severe and exposed localities, is more desirable than the Cottonwood because it does not shed cotton and is more shapely in its form and general growth.

Cottonwood (*P. deltoides*). (A.) Lg. Has long been a popular tree in the Western States, particularly in the prairie sections. It is probably the best known and most planted of any of the Poplars. Its greatest value is in its extreme hardiness and rapid growth.

Lombardy or Italian Poplar (*P. nigra* var. *Italica*). (B.) Lg. A unique and conspicuous tree on account of its erect columnar form. An extremely rapid grower and, for certain purposes in landscape gardening, an indispensable tree. It is remarkably striking and picturesque when grouped with other trees in order to produce an irregular sky-line.



Lombardy Poplar.

POPLARS—Continued.

Norway Poplar. (A.) Lg. Sometimes called the "Sudden Saw-log." Very hardy, rapid grower. Resembles the Carolina and Canadian, yet has a distinct appearance in leaf and shape of tree. Planted heavily on prairies and where a quick growing tree is wanted. More desirable than the Cottonwood and equally hardy.

Silver Poplar (*P. alba* var. *nivea*). (A.) Med. The commonest and hardiest type of the Silver or White Poplar. It is sometimes called Silver Maple from the resemblance of the foliage to that of the Maple. In ornamental planting it is particularly useful on account of the striking foliage effect. The under side of the leaves are a clear silvery white, contrasting remarkably with the dark green of the upper surface.

Walnut - Juglans

Black Walnut (*J. nigra*). (A.) Lg. One of the noblest trees of the American forest. The wood is of well known value for cabinet making and interior finish. It is becoming scarcer annually and in many sections walnut groves are being established for the timber crop.

Willow - Salix

Golden Russian Willow, Yellow Willow (*S. vitellina* var. *aurea*). (A.) Lg. At the present time one of the most planted of all Willows and a very important tree, both from an economical and ornamental standpoint. It makes a round topped tree of symmetrical form. One of its strongest ornamental features is the bright, clear, golden yellow bark which offers a pleasing contrast wherever it is used.

Laurel Leaf or Bay Leaf Willow (*S. pentandra*). (A.) Sm. An ornamental variety of upright growth, forming a round head. Bark is brownish green. Foliage is a deep shining green, closely resembling that of the Laurel. Thrives equally well on high or low ground. An especially desirable variety to plant near the water.

Niobe Weeping Golden Willow (*S. vitellina* var. *pendula nova*). (B.) Med. Weeping or drooping form introduced from Europe by the South Dakota Experimental Station. It has graceful, drooping branches, and is of regular habit. The

**Niobe Weeping Willow.**

Station Bulletin says of it, "One of the most promising novelties in recent years as there is need of a strictly hardy, weeping willow in the North for lawns, parks and cemeteries."

Wisconsin Weeping Willow (*S. Babylonica* var. *dolorosa*). (B.) Med. This is a variety of the above which is of particular value in the North as it is much hardier and seems otherwise better adapted to the extreme conditions of this section. It is of drooping habit though not so pronounced as the Kilmarnock type.

White Willow, Grey Willow (*S. alba*). (A.) Lg. A large tree with short and thick trunk. The branches are yellowish brown and the leaves an ashy gray and silky throughout, giving a white appearance to the whole tree. Popular as a rapid growing ornamental tree for lawn and street planting in exposed locations.





For an untrimmed low hedge Japanese Barberry cannot be excelled.

Ornamental Deciduous Shrubs

Almond - *Amygdalus*

The so-called Flowering Almonds really belong to the genus *Prunus*, as they are varieties of *P. Sinensis*. To avoid confusion, we have therefore listed them under that head.

Barberry - *Berberis*

Their orange and yellow flowers in May or June are succeeded by a small but highly colored fruit. In many places are much used for hedging purposes. For this use they give the best effect when grown as a loose hedge and not sheared too closely.

Thunberg's Japanese Barberry (var. *Thunbergii*).

(C.) The *Thunbergii* Japanese Barberry is the only one of its species that is not a carrier of rust. 2 to 3 feet. Of low, spreading growth, forming a dense bush. The twiggy branches are set with small, sharp thorns and in spring are covered with small flowers succeeded by brilliant scarlet berries. The foliage takes a splendid autumn coloring of gold and scarlet.

Buckthorn - *Rhamnus*

Common Buckthorn (*R. Catharticus*). (A.) 4 to 6 ft. June-July. One of the best plants for ornamental hedges. The ovate, dark green leaves are attractive throughout the season. Flowers small and inconspicuous. Branches are thorny. The black fruits are about the size of a pea. It stands shearing well and is easily kept trimmed to any desired height and form.

Buffalo Berry - *Shepherdia*

Shepherdia Argentea. (A.) The Western Buffalo Berry. 8 ft. A sturdy shrub native in the Dakotas and Manitoba. Stout, thick branches, with a profusion of spurs, and thickly covered with foliage, light green above and silvery beneath giving a similar effect as the Russian Olive. The inconspicuous flowers appear before the leaves and are followed on the pistillate plants by a mass of yellow fruit. A good vigorous shrub for hedges where close clipping is not required, and valuable on soils that are not the best.

Cranberry, High Bush

High Bush Cranberry (*V. opulus*). (A.) 7 to 10 ft. June. Has handsome broad foliage of a lustrous, dark green color, changing later to rich coppery tints. The large flat cymes of white flowers are very ornamental but the shrub is particularly conspicuous later in the fall and early winter for its brilliant scarlet fruit which hangs in large pendulous clusters, remaining until spring.

Coral Berry

Coral Berry, Indian Currant (*Symphoricarpos vulgaris*). (B.) 4 ft. July. Resembles *S. racemosus* in growth but is little more compact. The flowers are borne in dense terminal spikes. They are followed in late summer by dark purplish red berries, smaller than the fruit of *S. racemosus* and hanging in closer clusters. Well adapted for shady places.



Flowers of High Bush Cranberry.

*Deutzia gracilis.***SHRUBS—Continued.****Cotoneaster**

Acutifolia. (C.) A new addition to the hedge plants of the Northwest. Apparently hardy. Its glossy, dark green foliage, fine twigs makes it especially adapted as a low ornamental hedge.

Currant - Ribes

Has all the attractiveness of our cultivated currants and a beautiful bloom as well. Fast growers and thrive anywhere.

Gordon's Currant (*R. Gordonianum*). (C.) 4 ft. May-June. A profuse blooming variety with crimson and yellow flowers in showy spikes.

Missouri Currant, Golden Currant (*R. aureum*). (C.) 4 to 6 ft. A native species with golden yellow flowers in showy racemes. These have a spicy fragrance. The fruit is usually black but occasionally yellow.

Mountain Currant (*R. alpina*). (C.) 3 ft. May. Dense, upright racemes of golden flowers. Fruit deep scarlet.

Deutzia

We are indebted to Japan for these plants. Their luxuriant foliage and profusion of attractive flowers have given them a popular place among flowering shrubs.

Numerous panicles of blossoms in late spring and early summer; the lower side of the leaves and calyx beset with minute starry clusters of hairs or scurf. Dwarf varieties make excellent subjects for the shrubbery border, thriving well in an ordinarily good soil and situation.

Dwarf Deutzia, Japan Snowflower (*D. gracilis*). (D.) A species of dwarf habit. Flowers pure white. It is a low, dense grower and entirely covered with bloom in its season.

D. crenata. (D.) 4 to 6 ft. Showy white-tinged pink flowers.

Dogwood - Cornus

An important genus of ornamental shrubs. Most of them hardy and most of them particularly conspicuous for their brilliantly colored bark. Those with conspicuous bark are especially desirable in massed groups in contrast with other shrubs. Some of the varieties are also finding favor as hedge shrubs for loose or open border.

American Red Ozier, Dogwood, Kinnikinnick (*C. stolonifera*). (A.) 6 to 8 ft. This well known native of our northern forests is being more and more used in ornamental planting, especially in the northern states where its absolute hardiness is appreciated. The bark is a dark, rich red and contrasts beautifully with the darker tone of other trees and shrubs. Flowers in dense cymes followed by white berries.

Siberian Dogwood (*C. alba*). (A.) 5 to 6 ft. A strong grower with erect and stout, bright red branches. Useful for shrubbery and for winter effects.

Yellow-branched Dogwood (var. *flaviramea*). (C.) Bright yellow bark in winter; particularly effective in shrubberies planted with the red-branched Dogwood.

C. sanguinea (var. *elegantissima variegata*). (C.) 4 to 5 ft. One of the most desirable shrubs with variegated foliage. The leaves are broadly margined with white and some are almost entirely white. The bark is bright red in winter.

Elder - Sambucus

Common American Elder (*S. Canadensis*). (B.) 8 to 12 ft. A large spreading bush with handsome foliage. The white flowers in June and July are borne in flat cymes. They are followed by black fruits in August and September.

Cut-leaved Elder (var. *laciniata*). (B.) 5 to 9 ft. A valuable variety with elegantly divided leaves. Of drooping habit and one of the handsomest shrubs in cultivation.

European Elder, Blackberried Elder (*S. nigra*). (C.) 6 to 10 ft. July. A native of Europe, with purplish black berries in September.

Golden Elder (var. *aurea*). (A.) 5 to 8 ft. Bright, golden yellow leaves, the color being distinct and permanent all summer. Of vigorous spreading habit. One of the best golden foliaged shrubs.

Red-berried Elder (*S. racemosus*). (C.) 6 to 10 ft. May. Showy cymes of white flowers, followed by dense clusters of vivid crimson fruits.

Euonymus - Strawberry Tree, Spindle Tree, Burning Bush

Burning Bush, Waahoo (*E. atropurpureus*). (D.) 8 to 10 ft. This is a native species and for general use considered the best variety in this family.

Strawberry Bush (*E. Americana*). (D.) 5 to 8 ft. A slender grower of dense habit. Foliage light green. Flowers reddish green in June. Fruit crimson pink.

**Golden Flowering Currant.**

SHRUBS—Continued.

Forsythia - Golden Bell

Fortune's Forsythia (*F. Fortuneii*). (C-D.) 8 ft. April and May. An upright grower, with deep green foliage and pendulous, trumpet-shaped, bright yellow flowers.

F. viridissima. (C-D.) 6 ft. May. Leaves and bark dark green. Flowers deep yellow. Of open growth and a fine shrub for general use.

Hazelnut - Corylus

Common American Hazelnut (*C. Americana*). (C.) 4 to 8 ft. This well known shrub, thriving luxuriantly in our native woods, is being used more and more for ornamental effects. Its rich foliage and erect compact habit of growth makes it particularly desirable for planting in massed groups where a solid color is desired.

Honeysuckle - Lonicera

This is an extensive genus of upright and climbing shrubs. They are free bloomers and of easiest culture. Many of them make admirable hedge plants and are being more and more used for that purpose. The climbing varieties will be found described under Climbing and Trailing Shrubs.

Morrow's Bush Honeysuckle (*L. Morrowii*). (B.) 5 ft. July. A Japanese variety forming a broad spreading bush with yellow flowers followed by showy crimson fruits.

Red Tartarian Honeysuckle (var. *grandiflora*). (A.) Flowers deep pink, almost red and larger than white.

Tartarian Honeysuckle (*L. Tartarica*). (A.) This is the best known variety in the western states and with its sub-varieties it can be found in nearly all ornamental plantings. The newer variations, var. *splendens*, var. *grandiflora*, etc., are so much superior to the old type that they are rapidly superseding it. All form vigorous upright shrubs from 8 to 12 ft. in height and are valuable for their flower and fruit alike. *L. Tartarica* proper has pink flowers in May and June.

White Tartarian Honeysuckle (var. *alba*). (A.) The well known white flowering variety. Otherwise similar to above.



Fortune's Forsythia.

Hydrangea

H. paniculata (var. *grandiflora*). (C.) 6 to 8 ft. August and September. The showiest of all autumn flowering shrubs, bearing immense heads of creamy white flowers which, with the approach of cold weather turn to rich shades of pink and coppery red. The large individual flowers are sterile and the panicles remain intact long after the first frosts.

Hydrangea Arborescens Sterilis (Hills of Snow). (C.) The latest addition to the summer flowering shrubs, coming into bloom after all the early ones have passed away. Its appearance of hills of snow in the middle of summer gives it its name. Does well in the shade.



Hydrangea Arborescens Sterilis.



Persian Purple Lilac.

SHRUBS—Continued.

Juneberry - Amelanchier

A small, slender tree that bears a profusion of drooping spikes of white flowers, rendering the tree quite conspicuous about the time that shad are running up the river. Also grown for its fruit.

Success Dwarf Juneberry, Shad Berry, Service Berry (*A. Botryapium* var. *Success*). (A.) 4 to 5 ft. April. It bears white flowers in late April, in most locations completely covering the shrub before the foliage or flowers of the neighboring trees have commenced their growth. The dark red berries which are ripe in mid summer are very ornamental. They have a particularly agreeable flavor, much like the Huckleberry, and are of good quality for pies, sauces, etc.

Lilac - Syringa

As explained under the head of *Philadelphus*, this generic name should be used only in connection with the Lilac. In the past it has been used as a common name for some of the varieties of *Philadelphus* but there is no connection whatever between them as they belong to entirely different botanical orders. No other shrub as a class is perhaps so well known. A careful selection will offer a greatly extended season of blooming.

No need to recall the many virtues of this favorite and charming old-fashioned shrub, since they are known to everyone. We are all familiar with the pretty cool green of their leaves and the delightful fragrance of their flower trusses. Suffice to say they are perfectly hardy and will grow wherever they are planted.

Common Purple Lilac (*S. vulgaris*). (A.) 8 to 10 ft. May. This is the oldest and best known type of the Lilac. From it have sprung most of the hybrids and seedling varieties which have made the Lilac as a class one of our most popular modern shrubs.

Common White Lilac (var. *alba*). (A.) The well known white flowering form of the above.

Siberian White Lilac (*S. Siberica alba*). (A.) A vigorous growing variety with small and narrow foliage. The flowers are white with a bluish tint and quite fragrant. It is very free flowering and one of the best of the lilacs.

S. Villosa. (C.) 6 ft. May. A species from Japan. Large branching panicles. Flowers light purple in bud and white when open. Fragrant. Foliage resembles that of the White Fringe; late bloomer.

Hungarian Lilac (*S. Josikaea*). (C.) 6 to 8 ft. May. From Transylvania. A fine distinct species of vigorous upright growth with dark, shining leaves and violet purple flowers which appear very late, generally after the other Lilacs are through blooming.

Japan Tree Lilac (*S. Japonica*). (C.) 15 to 18 ft. Late June. A distinct variety forming a pyramidal and upright shrub or small tree. It has broad, handsome, dark green foliage and bears large heads of creamy white flowers very late in the season.

Persian Lilac (*S. Persica*). (A.) 5 to 6 ft. May and June. A distinct species of rather smaller growth than *S. vulgaris*. The branches are slender and straight with smaller and narrower leaves. The bright purple flowers are borne in loose panicles. A very graceful form.

The following six grafted Lilacs we grow as being the finest of the improved varieties, representing the purple, red and white shades in both single and double flowers.

var. Chas. X. (C.) Single. A strong growing variety with large shining leaves. Loose trusses of reddish purple flowers. One of the best.

var. Ludwig Spaeth. (C.) Single. Panicles long. Individual flowers large, single, dark purplish red. A distinct and superb variety.

var. Madam Abel Chatenay. (C.) Double. Large panicles of double white flowers. A very fine variety.

var. Pres. Grevy. (C.) Double. A very fine, double variety with large panicles of beautiful blue flowers.

var. Princess Alexandra. (C.) Single. A variety of white flowers. Panicles medium to large. One of the finest of its color.

var. George Bellairs. (C.) Double. Red.



Double Lilac.

SHRUBS—Continued.

Oleaster, Wild Olive - *Elaeagnus*

Very desirable spreading evergreen shrub with deep reddish-brown twigs and silvery white foliage. The fruit in midsummer is very pretty and quite edible.

Russian Olive or Russian Oleaster (*E. angustifolia*). (A.) 12 to 20 ft. Forms a large sized shrub or small tree with a rounded top and narrow leaves about three inches long, light green above and silvery white beneath. The small yellow blossoms appear in profusion the latter part of June. They have a pronounced and distinct fragrance that is very agreeable. It is extremely hardy and succeeds well in very dry locations. It is proving a good stock hedge and seems adapted to the purposes of ornamental hedges or screens.

Silver Berry (*E. argentea*). (A.) 5 to 8 ft. July. A native of Manitoba, Minnesota and Dakotas. Forms a handsome shrub with large leaves (comparatively), silvery on both sides. The flowers are small and yellow, quite fragrant. They are followed by silvery berries, resembling *E. angustifolia* but smaller.

Plum and Almond - *Prunus*

The most ornamental of the *Prunus* family having exquisite and showy flowers in early spring, either before or with the equally ornamental foliage. Very decorative plants.

Double Flowering Plum (*P. triloba*). (B.) 4 to 6 ft. May. A broad spreading shrub of vigorous growth with three lobed leaves preceded by light pink, very double flowers which completely surround and cover the branches so as to entirely hide them. One of the finest, hardy, spring-blooming shrubs under cultivation. As a single lawn plant it is very effective and also a good shrub to work in groups with other shrubs.

Double White Flowering Almond (*P. Japonica flore alba pleno*). (C.) 4 ft. May. Handsome, double white flowers in great profusion completely covering the branches.



Purple Fringe or Smoke Tree.



Double Flowering Plum—*Prunus Triloba*.

Red Flowering Almond (*P. Japonica flore rubra pleno*). (C.) 3 to 4 ft. May. A charming, low growing shrub which in its season is covered with double pink or red flowers.

Western Choke Cherry (*P. Virginiana* var. *demissa*). (A.) 8 to 12 ft. This well known, native shrub is being used more each year in ornamental planting. Perfect hardiness in rather exposed conditions gives it a value in this line. In growth it forms a large compact shrub or small tree with good foliage and it is a distinctly ornamental species.

Western Sand Cherry, Rocky Mountain Cherry (var. *Besseyi*). (A.) Vigorous and absolutely hardy, has many ornamental purposes. The white blossoms appear in early May and are followed by black fruit three-quarters to one inch in diameter.

Privet - *Ligustrum*

Where it succeeds well, the Privet in all its varieties has become a very popular shrub. It lends itself to a number of ornamental purposes, the best known being its use in hedges and borders. The foliage of most sorts is sub-evergreen.

Chinese Privet (*L. Ibotia*). (C.) 4 to 5 ft. A distinct variety with large white flowers produced in great profusion and very fragrant. Long inter-twined branches.

Amoor River Privet (var. *Amurense*). (D.) 5 to 7 ft. This is of lighter, more slender growth than the above. Light green oval foliage and showy spikes of pure white flowers.

Purple Fringe

Purple Fringe or Smoke Tree (*R. Cotinus*). (D.) A vigorous, bushy grower with very ornamental foliage and bearing very large panicles of yellowish purple, feathery flowers in June. There is nothing else like it in shrub or plant. The foliage of this variety also assumes shades of reddish brown in fall.

True Purple Fringe (var. *atropurpurea*). (D.) A form with flowers of a deep reddish purple. Very distinct and showy.



Spirea Anthony Waterer.

SHRUBS—Continued.

Siberian Pea Tree - Caragana

C. arborescens. (A.) 10 to 15 ft. June. By some this is catalogued under deciduous trees but in the North and West it belongs among tall growing shrubs. Its numerous yellow, tapering twigs and very small pinnate leaves are of the same character as those of the Acacias, but much smaller and of a rare golden green color. The flowers are small, yellow, and produced singly or in clusters. A fine shrub for low screens. No plant has gained such a rapid popularity as the Caragana, especially through the semi-arid sections of the Northwest. It seems to thrive in dry seasons and therefore used quite extensively throughout the West as a snow-catch or low windbreak. It is the one tree which is absolutely impervious to the hot winds or extreme droughts of Montana and western Dakota.

Spirea - Meadow Sweet

Ash-Leaved Spirea (S. sorbifolia). (A.) 5 ft. July. A vigorous growing shrub with large handsome foliage resembling that of a Mountain Ash. The white flowers are borne in elegant long spikes. The foliage appears very early in the spring. A desirable shrub in every way.

Billard's Spirea (S. Billardi). (B.) 4 ft. July and August. A strong grower with dull green foliage and dense panicles of bright pink flowers. Also blooms occasionally during the fall.

Fortune's Spirea (S. callosa). (B.) 3 to 4 ft. June. A compact shrub with upright branches and bluish green foliage. Bears panicles of rosy pink blossoms sometimes continuing all summer.

Fortune's Dwarf White Spirea (var. alba). (B.) 2 ft. Blooms all summer. A pure white form.

Golden Spirea or Golden-Leaved Nine Bark (opulifolia var. aurea). (A.) Foliage is of a bright golden color and finely shaded. This is one of the finest golden-leaved shrubs and a very desirable variety for the contrast it offers.

Willow-Leaved Spirea (S. salicifolia). (B.) 4 ft. July and August. Long narrow willow-like leaves. Flowers rose colored. A distinct and very desirable variety.

Thunberg's Spirea (S. Thunbergii). (C.) 3 to 4 ft. May. One of the finest spring blooming, small shrubs. Flowers are pure white and are borne along the entire length of the branches, bending them down in graceful curves. Foliage narrow and willow-like and turns to pleasing shades of orange scarlet in autumn.

Van Houtte's Spirea (S. Van Houttei). (B.) 4 to 5 ft. June. Perhaps the most popular of all the Spireas and has been the most planted. It is of upright though pendulous growth with foliage of rich green which assumes pleasing autumnal coloring. When covered with its dense clusters of pure white flowers, the branches are weighted down nearly to the ground.

S. Douglassi. (B.) 3 ft. August. This variety bears immense terminal spikes of deep rose colored flowers. One of the best.

S. Bumalda. (B.) 2 to 3 ft. July and August. Dwarf, but vigorous of habit; foliage narrow. Flowers rose color in compact corymbs.

var. Anthony Waterer. (B.) This beautiful variety has largely superseded its parent. It produces flowers of a bright crimson and blooms so freely that it may be kept in flower throughout the summer till late fall by trimming away the dead blooms. The dense flower clusters are almost twice as broad as those of the other varieties of this species and of a much brighter, richer color. The foliage also is very handsome being variegated with creamy white or yellow and sometimes tinted with pink.

S. arguta. (B.) 3 ft. May. Japan. Of light open habit, with small deep green foliage. When in bloom, each branch is completely covered with a wealth of minute, pure white flowers.



Spirea Van Houttei.



HYDRANGEA PG.

SHRUBS—Continued.

Siberian Hedgewood

(A.) The best low growing, hardy hedge yet discovered. It was introduced several years ago by Prof. N. E. Hansen, of S. D. We have tested it upon our grounds for several years and believe it will take its place as a standard hedge shrub in this section. It stands shearing without injury, and is very attractive. It is hardy clear to the tips and one of the most favorable features is that the buds start early. The hedge is green and handsome fully two weeks before other hedge shrubs are in leaf. Foliage hangs on late in fall.



Snowball Blossoms.

Snowball

Common Snowball or Guelder Rose (var. *sterilis*). (A.) 6 to 8 ft. The old fashioned snowball and always popular. Its large, globular clusters of pure white flowers in May and June have made it a conspicuous shrub in the gardens for many generations.

Japanese Snowball (*V. plicatum*). (D.) 4 ft. May. Handsome olive foliage and the flowers are larger and of a purer white than the common snowball. They are also borne in denser heads and show beautifully against the foliage.

Snowberry

Snowberry (*Symphoricarpos racemosus*). (C.) 4 ft. July and August. A slender branched upright growing shrub with rose colored flowers in loose racemes. These are followed by showy pure white berries which remain on well into the winter and which constitute the most conspicuous and valuable features of the variety. An excellent sort for planting in densely shaded places.

Sumach - Rhus

Good for planting in shady nooks or massing underneath some taller growing sorts. They are particularly ornamental in late summer.

Smooth Sumach (*R. glabra*). (C.) 8 ft. June. Handsome, pinnate foliage, assuming splendid autumnal coloring. Showy spikes of crimson fruits.

Cut-Leaved Sumach (var. *laciniata*). (D.) A variety of the above with deeply-cut, fern-like foliage. An elegant plant wherever used. Very few shrubs of its size; characteristically beautiful cut foliage.

Staghorn Sumach (*R. typhina*). (B.) 8 to 12 ft. A showy, broad headed shrub with very large, long, compound foliage, light green in color, changing to showy autumnal shades of red and yellow. The new growth of the smaller branches is clothed with a peculiar down, giving an appearance similar to the growing horn of a deer.



Weigela.

Viburnum

Arrow Wood (*V. dentatum*). (B.) 6 ft. June. Showy, glossy green foliage. White flowers in flat cymes, followed by deep, steel blue berries in September.

Weigela

They are very ornamental and popular where they are successful. They flower after the Lilacs. The following two varieties are the most beautiful and satisfactory.

Rose-Flowered Weigela (*W. rosea*). (D.) 5 ft. May and June. An elegant shrub with fine rose colored flowers. It is erect in habit and with good foliage. Best known and perhaps most popular.

W. hybrida var. *Eva Rathke*. (D.) The flowers of this hybrid are a dark carmine red.

Witch Hazel - Hamamelis

H. Virginica. (D.) 8 ft. October and November. A native, free growing shrub with well known medicinal properties. It has ovate, slightly downy leaves, like the Hazel, turning to brilliant yellow and purple shades in autumn. The yellow flowers are remarkable for their appearance in late autumn just as the leaves are turning and about to fall.

Small Stock for Ornamental Hedging

For the benefit of purchasers who desire shrub stock for ornamental hedges but who do not wish to invest the amount of money required for the larger stock to give immediate effect, we have a special line of graded seedlings in the following varieties: Thunberg's Barberry, Buckthorn, Buffalo Berry, Caragana, Russian Olive and Siberian Hedgewood. We can supply these varieties in three sizes: 6 to 12 in., 12 to 18 in., and 18 to 24 in. high. This stock will give the purchaser splendid results, although requiring a little longer time to make a good hedge than the heavier stock.

SHRUBS—Continued.

Syringa or Mock Orange - Philadelphus

Golden Mock Orange (var. *aureus*). (A.) 3 to 5 ft. A compact shrub with bright yellow foliage which retains its color well throughout the season. Very effective in grouping with the darker foliage of others.

var. *speciosissimus*. (C.) Of graceful habit with branches bending slightly at the tips. In June the bush is densely covered with large, pure white, slightly fragrant flowers.

Gordon's Mock Orange (*P. Gordonianus*). (B.) 8 to 12 ft. July. One of the strongest growers, with very large, pure white flowers, very slightly fragrant. Particularly valuable on account of its late blossoming season and the good size of its flower.

Large-Flowered Mock Orange (*P. grandiflorus*). (B.) 8 to 12 ft. June. Very showy, large flowers, usually in threes. Scentless. Rapid growth with reddish bark.

Sweet Mock Orange (*P. coronarius*). (B.) 8 to 12 ft. June. The old and well known Mock Orange. A graceful, upright bush with long branches covered with dark green foliage. In June completely covered with showy pure white flowers of a delightful fragrance.



Sweet Mock Orange—Philadelphus.



Siberian Dogwood (See page 36).



Morrow's Bush Honeysuckle (See page 37).



Evergreens in Winter.



No. 1, Pyramidal Arbor-Vitae. No. 2, Mugho Pine. No. 3, Colorado Blue Spruce. No. 4, Koster's Blue Spruce. No. 5, American Arbor-Vitae. No. 6, Concolor Fir.

Evergreens

Nursery grown evergreens transplant as easily as any class of trees. Young trees or those of moderate or small size, are the most certain and profitable to plant. In the shelter belt thorough culture and mulching are necessary, especially in dry seasons. We have found spring planting the best. In planting, tramp the earth very firmly but carefully about the roots. The importance of this cannot be overstated. In transplanting, the roots should never be exposed to the sun and air a single minute. The sap of the northern evergreen is of a resinous nature, and when once dried out does not start again as with most deciduous trees. This is why evergreens must be given extra care in handling. To guard against failures in planting of Specimen Evergreens, it is advisable to have them shipped balled and burlapped. This means that the original ball of earth is left intact around the roots and held in place by a covering of burlap. Balled and burlapped evergreens are a little more expensive but the customer is fully repaid for this extra expense by the results obtained.

In planting balled and burlapped evergreens, it is not necessary to remove the burlap. Dig the hole and place the evergreen in it, burlap and all. Cut the string which holds the burlap in place. The roots of the evergreen can easily penetrate the burlap until it has rotted. If a tree develops a thin or "scraggly" form, this may be checked and the branches thickened up by clipping the ends of the new shoots while they are soft and tender, which will induce the branches to throw out side spurs the following season. Evergreens are most superb for screens or windbreaks around buildings, orchards, and stock corrals. In planting evergreens in rows for wind protection, it is well to set two rows parallel, with the trees in one row opposite the spaces in the other. On exposed prairie locations where evergreens are hard to start, a "nurse" belt of some cheap, quick-growing, deciduous trees like the Golden Willow or Canadian Poplar should first be planted on the outside; in two or three seasons these will furnish the desired protection and the evergreens may then be planted inside this nurse row without loss.

Key to Size: Lg. Trees usually attaining a height of fifty feet or more at maturity. Med. Trees usually less than fifty feet and more than twenty-five feet at maturity. Sm. Trees commonly less than twenty-five feet at maturity.

From the standpoint of the horticulturist, the Conifers or cone bearing Evergreens take a very prominent place among the material for landscape gardening effects and in their more practical use as windbreaks. Their evergreen habit—for all except the Larches and Ginkgos are evergreen—and their conical form, especially in the early periods of life, with a branch system persisting to the base for a long time, are the elements which make them desirable.



Siberian Arbor-vitae.

Arbor-vitae - Thuya

Ornamental evergreen trees of narrow, pyramidal habit, with much ramified branches; the branches are arranged frond-like. They are all of regular, symmetrical habit, indispensable in formal gardening and some of them are very beautiful and desirable as specimens. The well known *T. occidentalis* is one of the hardiest and best evergreens for shelter-belt and timber planting in the North.

Common American Arbor-vitae (*T. occidentalis*, also erroneously called White Cedar). (B.) Med. The best known and most valuable of this genus. As a specimen in good soil, it often attains a height of sixty feet and has been much used for telegraph poles. In cultivation this species is best known from its wide spread use as an ornamental hedge. It is of a bright, healthy green with an abundance of foliage and of natural pyramidal shape adapting it to



An effective windbreak of Evergreens.

hedge purposes. As it stands severe pruning, it is easily maintained in a low hedge of almost any desirable height or shape. Being one of the few Evergreens that will grow in wet soils, this becomes a valuable species for many conditions of ornamental planting. It is also a very handsome specimen Evergreen if trimmed properly at the crown so as to thicken up the branches and retain the lower ones. For shelterbelt planting and prairie forestry the American Arbor-vitae is without a rival for its vigor and hardiness; either alone or mixed with Evergreens or deciduous trees, it is indispensable.

Pyramidal Arbor-vitae (*T. orientalis* var. *pyramidalis*). (B.) Sm. to Med. A densely branched Arbor-vitae, of perfectly columnar form. One of the most remarkable Evergreens in respect to its symmetry. Like the Irish Juniper, it holds its perfect fastigate shape throughout life without trimming or pruning. It is perfectly hardy and will succeed anywhere that the American Arbor-vitae grows. A very valuable variety for many kinds of ornamental planting and a rich and attractive variety wherever columnar effects are desired.

Siberian Arbor-vitae (*Thuya Occidentalis* Wareana). (C.) Sm. Very desirable type, dense, globular shape, very pretty either in groups or single. Foliage stiff, heavy, deep rich color, rather dwarf in its growth.

Globosa Arbor-vitae. (C.) Sm. Low globular form, slender, bright green foliage.

Silver Tipped Arbor-vitae. (C.) Sm. Dense grower; the ends and edges of the foliage are tipped with white.

Hovey's Golden Arbor-vitae. (C.) Sm. A strikingly pretty dwarf Arbor-vitae of compact form, with bright green foliage.

Cedar, Juniper - Juniperus

Juniper Savin (*J. Sabina* var. *prostrata*). A unique, dwarf Evergreen of prostrate or almost creeping habit. It thrives in light and poor soil and is very suitable for rock work. One of the finest shrubs for low growing hedges that is hardy in the North, and it can be sheared closely and kept low and in good form. The foliage is a very dark, deep rich green, very fine and compact.

Red Cedar (*J. Virginiana*). (B-C.) Lg. The Red Cedar is indigenous throughout Minnesota and the entire Northwest. It is of conical form and quite regular, densely branched, the foliage being thick and of a rich deep green. The bark on the trunk and branches is a pronounced reddish brown. In fall the branches are thickly hung with pretty, little blue berries.



Red Cedar.
Balled and Burlapped.



Austrian Pine.

EVERGREENS—Continued.

Fir - Abies

The Firs are of characteristic, tall, pyramidal habit and, although resembling the Spruces in form, they are more regularly symmetrical. They are nearly all native of the northern country and more handsome in cultivation than in their native soil.

Balsam Fir (*A. balsamea*). (A-B.) Lg. The best known species of this class. It forms a slender, spiral and very symmetrical pyramidal tree. It is one of the most rapid growing trees in the Conifer group, and in mixed plantings particularly it is very valuable for windbreaks and screens. The foliage is very dark green with short soft needles which have a pleasant aromatic fragrance.

Hemlock, Hemlock Spruce - Tsuga

Magnificent pyramidal trees with regular branching habit, and soft, light foliage, and pendulous cones at the ends of the branches. They excel for shelter-belts and windbreaks, as well as for more ornamental planting.

Common Hemlock or Hemlock Spruce (*T. Canadensis*). (B-C.) Lg. The general description above should really be applied to this species as it is the best known and most commonly planted in the Northern States. It is one of our finest native Evergreens; of pyramidal habit, attaining seventy feet in height and sometimes more. The branches are delicate and somewhat pendulous. The dark green foliage is tufted, yet light in appearance. Makes a handsome specimen tree and is always desirable in the Evergreen group.

Pine - Pinus

An indispensable group of trees to the landscape beautifier, in their varied forms and adaptability. They are hardy, endowed with a peculiar rugged type of beauty, and carry about them a delightful pungent aroma. Their needles are borne in tufts of two to five, and greatly add to the effective value of the tree.

Austrian Pine, Corsican Pine, Black Pine (*P. Laricio* var. *Austriaca*). (D.) Lg. A European Pine of much ornamental merit. It makes a tall, handsome tree with broad, oval head. One of the most important Conifers for specimen or mass planting, and exceptionally good for windy exposures.

Dwarf or Swiss Mountain Pine, Mugho Pine (*P. montana* var. *Mughus*). (C.) Sm. A low spreading Pine and very useful in lawn planting. In foliage it is a true Pine with stout, bright green needles of medium length. Valuable for planting on rocky ground and hillsides.

Jack-Pine (*P. divaricata*). (B.) Med. The most northern of all American Pines. While not of as great ornamental value as most of the other Pines, the species is coming into use in the prairie states on account of its extreme hardiness and vigor.

Ponderosa Pine (*P. Ponderosa scopulorum*). (Bull Pine.) (A.) Med. Native on the tops of the Buttes in the bad lands of western North Dakota. Grows there to saw-log size, absolutely hardy, should be transplanted very young. Never plant larger sizes than 12-18 in. It is a stout spreading tree with branches often pendulous, rapid grower, very heavy branches, foliage dark green with long needles.

Scotch Pine (*P. sylvestris*). (B.) Med. to Lg. This Pine is one of the most important timber trees of Europe. By many it is considered of equal ornamental merit with the White Pine and Norway Pine and is a very desirable tree for the evergreen group. A rather pyramidal tree when young, with broad and round top, often picturesque in old age. The needles are of medium length, very rigid and of a bluish green color.

White Pine (*P. Strobus*). (B.) Lg. Our native northern White Pine is famous as a stately and beautiful tree under a wide variety of conditions. It is tall and straight with slender, glaucous foliage, somewhat tufted at the ends of the branches. In habit it is very graceful whether kept low by trimming or allowed to grow naturally.



This illustration shows the difference between an evergreen with poor root development and one that has been properly grown.



Black Hills Spruce.

windbreak, it can not be excelled by any other Evergreen offered. It grows a little slower than the Norway Spruce, but its many other good qualities fully outweigh this.

Minnesota Forestry Board writes: This variety is strong and especially hardy under conditions of drought and exposure. It is adaptable to light soils and especially recommended for the North and West. (Bul. No. 1.)

R. W. Peterson, before Minn. Hort. Soc., 1913: Among the Spruces, the Black Hills Spruce is giving the best satisfaction. It has all the good characteristics of the White Spruce and is also exceedingly hardy. The Minnesota and North Dakota Trial Stations predict that it will supersede all other Spruce plantings.

Prof. C. B. Waldron, North Dakota Experiment Station: The Black Hills Spruce does not seem to notice the drought at all.

Our plants are from seed collected in the Black Hills, and absolutely true to type.



Colorado Blue Spruce.

Spruce - Picea

Black Hills Spruce.

(*Picea Canadensis*.) Lg. The Black Hills Spruce, by some called a type of the White Spruce grown in the Black Hills, is rapidly becoming the most popular Evergreen in the Northwest. Its absolute hardiness, the ease with which it transplants, its symmetrical dense growth and dark green color, place it in a class by itself. As an individual ornamental tree, it is as distinguished as the Colorado Blue and as a



Norway Spruce.

Colorado Blue Spruce (*Picea pungens*). (A-B.) Med. to Lg. This noble species from the Rocky Mountains is without doubt the most striking and ornamental of the Spruces, if not of all the Conifers. A dense growing, symmetrically pyramidal tree with stiff, pointed foliage, the needles being very thickly borne on the stem.

var. glauca. (B.) This type of the Colorado Blue Spruce, sometimes known as Koster's Blue Spruce, has been selected and bred by nurserymen because of its extreme silvery blue foliage. It is the highest colored and most striking of all Evergreens for lawn planting and should be more used. The high price which these trees command is due to their rarity when grown from seed and difficulty of grafting successfully.

Norway Spruce (*P. excelsa*). (C.) Lg. Of rather rapid growth and is a handsome tree with its graceful habit and dark green dense foliage. In Minnesota and adjoining states, the native White Spruce is hardier—therefore preferable.

White Spruce (*P. alba*). (B-C.) Lg. A well known native tree and one of the most magnificent ornamental evergreens for all purposes. It forms a loosely symmetrical tree with rather pendent branches toward the base. As a specimen tree on good soil, it is a shapely feature for any planting. For shelter-belt or other hedge purposes it is also peculiarly well adapted because of its dense foliage and its ability to retain its lower branches. Its color is a bluish green. This species endures heat and drouth better than most other Evergreens of true ornamental value.

Spruce, Douglas - *Pseudotsuga*

Douglas Spruce, Red Fir (*P. Douglassi*). (A-B.) Lg. The only species well known in cultivation, and in its habitat through the mountains of western North America it is one of the tallest and hand-somest forest trees. It thrives best in a porous, sandy loam; of symmetrical and pyramidal habit, with regular branches and dark red brown bark. The needles are long and of a green or bluish green, varying with different specimens.



Gen. Jacqueminot.

Roses

The Rose has justly been called the Queen of Flowers. More time, money and people are occupied in its culture, and more pleasure derived, than in any other flower. While other plants receive greater attention in certain latitudes and at certain periods, the rose is the universal favorite at all times and in all places.

Out-Door Roses are of the widest importance, as they are within the reach of all, and with judicious selections, will furnish bloom for even a longer period than the hot-house varieties. The average house does not furnish the temperature and facilities for successful rose culture, and so the garden becomes the center of interest for lovers of the flower.

In the North, roses may be enjoyed in almost the same profusion as elsewhere—with the exception of Southern California—provided the few simple conditions necessary for their growth be given them.

Sunlight. The first requisite is plenty of sunlight. It will not do to plant them in a shady place, for the sun is needed to warm the soil and stimulate the root system.

Moisture. The next most important requirement is moisture. This can only be made certain by some provision for irrigating the ground during the dry periods. It can be taken from the water system of the town, or a good and cheap plan is

to have a tank or reservoir filled from a well by a windmill. Water should be applied by thoroughly soaking the ground so that it is full of moisture, much as a hard rain of several hours would do it. When in bloom the blossoms should not be showered too much, but the water should run on the ground in little ditches from one bush to another until it has taken up all that it will. The time to irrigate is before the ground is dry and the plants suffering from thirst. Do not spray the surface of the ground and imagine that the roots have had enough. Be liberal when you do water them and then let them go until they need more. Usually the ground is wet enough early in the spring; but it is sometimes dry at that season, and the roots need a wetting the first thing after they are uncovered. During the month of October do not water the ground, but allow the growth to stop and the wood to ripen for winter.

Soil. The ideal soil for roses is a good rich clay loam. They will do well in sandy soil if a little clay and plenty of rich manure is mixed with it, and it is then generously watered. They will not do well in hard clay that is impervious to water or in gravel that drains it all away.

Cultivation. This is very important, for it helps to stimulate the action of the roots by quickly imparting to them the food and drink that is applied to the ground. After fertilizers are applied they should be cultivated in; and when the ground is irrigated it should be allowed to dry a

ROSES—Continued.

little on the surface and then stirred to make it fine and loose so as to prevent evaporation and drying out. Surface cultivation should be given the ground at least once a week, from the time the bushes are uncovered until October.

Protection. In late fall, before severe freezing weather sets in, choose a dry time to cover the bushes. See that the ground is thoroughly wet so that the roots will not dry out during the winter, for it will be a long time before they will have another chance to take a drink.

In wintering roses the main thing is to keep the bushes dry. I have found the best way to do this is to first make a bed of dry straw or leaves for the bushes to lie on. It should be six or more inches deep. Bend the bushes over and lay them gently on the bed and cover them with two feet of dry straw, making it highest in the middle, much like the roof of a house. Then cover the straw with boards. Short pieces can be nailed to a ridge pole and to a strip at the lower end, making it quite steep so as to shed water easily; or boards can be used horizontally, by commencing at the base of the straw on each side, lapping the boards an inch and using enough nails to hold them in place. A narrow board at the top can hold the two sides together. Put boards at the end to keep out the wet and to hold the straw in place. Leaves or hay can be used in place of straw. Do not uncover in the spring until freezing weather is over, but uncover before they start their growth. Where there is danger from mice, place poisoned grain where they will get it.

Planting. The best time to plant is in early spring, before the bushes have started to grow. They should be set two to three inches deeper than they grew in the nursery. Mud the roots in thick mud before planting and set them very firmly.



Frau Karl Druschki.

Pruning. Keep all old or dead branches cut out. In the spring, prune the tops back to about four feet and cut off all the tops that look black or dry, back to the fresh buds.

Diseases and Insects. As in everything else the old saying, "An ounce of prevention is worth a pound of cure," holds good in this case. The best way to prevent disease in rose bushes is to give them good cultivation and do all that is necessary to secure a strong vigorous growth. Disease always attacks the weak more quickly than the strong, and this fact must be carefully borne in mind, thorough cultivation is absolutely necessary in combating disease and insects.

For all these pests it is best to be ready and give them their medicine before they have had time to do much damage or increase in numbers. "The early bird catches the worm."

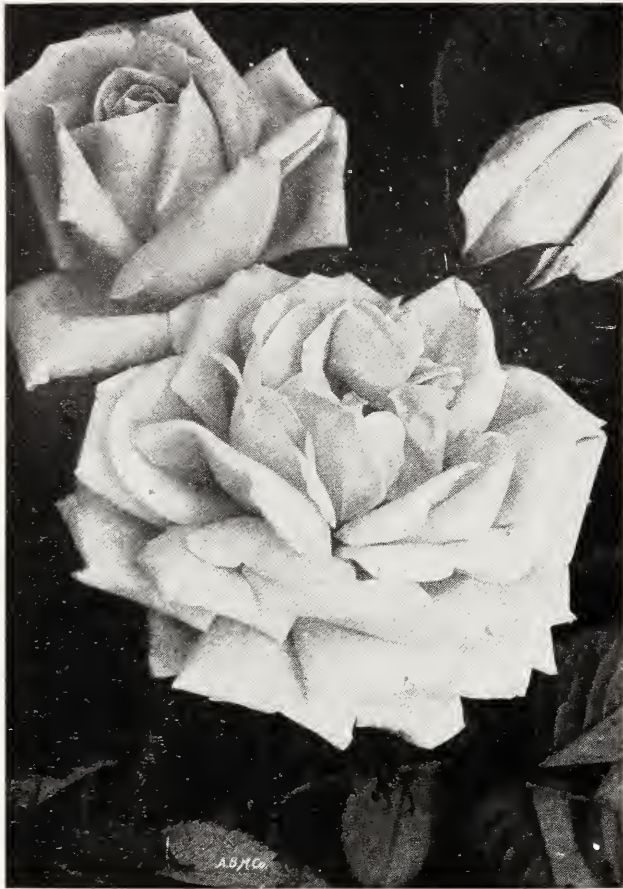
Mildew. Sudden changes of temperature may cause mildew, and it cannot be prevented as it can in the greenhouse. Dusting the bushes with sulphur will assist in preventing it. Keep up the cultivation, furnish moisture, and as the weather grows warm again the plants will revive and outgrow the disease.

The Red Spider. Is most likely to attack the bushes when it is dry and warm. They are very small and are not discovered until they have become numerous. The bushes begin to look

unhealthy and the leaves have a sickly appearance and will begin to drop off unless the insects are killed before they have reached the last stages of disease. They can be controlled by spraying with cold water and keeping the bushes quite damp. Morning is the best time in which to do it, and the under part of the leaves requires special attention.



Paul Neyron.



A. De Diesbach.

SOME INSECTS WHICH ATTACK ROSES.

The Aphis. A greenish or pinkish plant-lice about one-twelfth inch in length that cluster in great numbers on the tender tips and buds, stunting the growth and injuring the bloom; injurious both in the open and on roses grown under glass. The eggs hatch as the rose buds are bursting. The Aphis can be controlled by spraying with tobacco water, to which a small amount of soap may be added. Good results may be obtained by thorough spraying with whale-oil soap, or any good soap, one pound in eight or ten gallons of water being about the right proportion. It is sometimes a good plan to dip the buds and tips of the branches in a dish nearly full of the solution.

The Rose-Thrip. A very small white fly or midge that is found on the under side of the leaves; can be destroyed by spraying with tobacco water. This also acts as a preventative of this pest.

The Rose Bug is a beetle which attacks the buds before they have had time to develop, and eats out the center. A poison to destroy these would need to be so strong that it would necessarily injure the plant; so the only alternative is to pick them off and destroy them as potato bugs are destroyed. Fortunately but few localities are troubled with this pest and persistent effort will abate the nuisance.

The Rose Slug is the most troublesome of all the pests that molest our outdoor roses, but a knowledge of the habits of its progenitor will enable the grower to eradicate it quickly. It is the larva of the saw-fly. This fly comes from the ground during the latter part of May, when the rose foliage is reaching good form. The female deposits its eggs in incisions made in the leaves on the under side. These eggs hatch in from twelve to fifteen days, and the little grub emerging therefrom at once begins to eat the leaves. They are light green in color. An early application of white hellebore sprinkled on the bushes in the early morning while the foliage is damp is a good remedy.

Field or Outdoor Roses

We have long made a specialty of growing rose plants and carry a most complete stock of our own growing, the largest of any nursery in the North. The plants we offer are all two year old field grown. The following list comprises only a small number of those we propagate. We have restricted this list to the very best and most vigorous varieties that are especially suited to the extreme North.

For convenience, the varieties are alphabetically arranged irrespective of the class to which they belong. Each variety is keyed as follows: C., Climbing; H. P., Hybrid Perpetual; J., June; M., Moss; H. R., Hybrid Rugosa; H. T. Hybrid Tea; W., Creeper.

The Hybrid Perpetuals are the best varieties where a wealth of bloom in the rose garden is desired. For hedge work or lawn grouping, the Rugosas and June roses are best adapted. The Moss and Brier roses are desirable for a number of purposes. All varieties marked "C" are the best sorts for porches, trellises and places where a climbing rose is needed.

As it is rather difficult to classify the hardiness of roses, we will indicate to some extent by a short explanation the relative hardiness of the various classes.

The Climbers should not be grown outside of the "C" territory and must be covered during the winter even there.

Hybrid Perpetuals can be grown in "B" territory, but need winter covering.

June Roses can be grown in "B" territory, but need winter covering.

Moss Roses can be grown in "B" territory, but need winter covering.



American Beauty Rose.

ROSES—Continued.

Hybrid Rugosa Roses can be grown in "A" territory, but need some covering.

Hybrid Tea Roses can be grown in "B" territory, but need winter covering.

Rugosa Roses can be grown in "B" and "C" territory and need no covering.

American Beauty. H. P. Generally conceded to be the most grandly beautiful of roses in size, form and color. Rich red, passing to crimson, very delicately veined and shaded and surpassingly fragrant.

Anne de Diesbach. H. P. In color the most lovely shade of carmine; very large double flowers, fragrant and one of the hardiest. A very desirable garden rose.

Baby Rambler. C. A wonderful little novelty, with large trusses of bright crimson flowers similar to those of Crimson Rambler. But instead of climbing, the plants form compact bushes not over eighteen inches high. Strictly a bedding rose, and most desirable in pots.

Baltimore Belle. C. Pale blush, nearly white; very double. Flowers in large clusters, the whole plant appearing a perfect mass of bloom.

Baron de Bonstetten. H. P. Dark red.

Black Prince. H. P. Much sought after because of its dark crimson flowers, which are shaded so deeply as to be almost black; cupped large, full, fine shaped.

Capt. Hayward. H. P. One of the finest of the red; large blossoms; free bloomer; deliciously fragrant.

Clio. H. P. Flowers large, of globular form; flesh color, shaded in center with rosy pink; handsome foliage. One of the best roses.

Coquette des Alpes. H. P. Large, full and well formed, with very large petals; lovely pure white; fragrant; profuse bloomer; hardy.

Conrad F. Meyer. H. R. Large, elegantly formed buds and flowers, $3\frac{1}{2}$ to 4 inches across and perfectly double; color, silvery pink. Very fragrant. Entirely hardy and desirable in every way.



Gruss an Teplitz.



Baron de Bonstetten.



Conrad F. Meyer.



Fisher Holmes.

ROSES—Continued.

Dorothy Perkins. C. A new hardy climbing rose, which, in its strong and vigorous growth closely resembles the Crimson Rambler. The flowers are formed in clusters of thirty to forty, and are of a beautiful shell pink.

Excelsa. The flowers are very double, produced in large trusses of thirty to forty, and almost every eye on a shoot produces clusters. Intense crimson-maroon, the tips of the petals tinged with scarlet.

Fisher Holmes. H. P. Scarlet, shaded crimson. Coloring is very brilliant. Flowers large and handsomely formed. Very good.

Francois Levet. H. P. An unusually strong and vigorous grower, and very free bloomer. Large, round stately flowers; color, bright rosy carmine. Very fragrant and exceedingly beautiful.

Frau Karl Druschki. H. P. A pure paper-white, free flowering, large sized Hybrid Perpetual. The bloom is perfect in form and flowers measure four to five inches across; very double and fragrant; large thick petals, very durable and handsome.

General Jacqueminot. H. P. A strong, vigorous grower, entirely hardy. Brilliant crimson.

Gruss an Teplitz. Double red H. T. Very free bloomer. Bears more red roses than any other variety known.

Hugh Dickson. H. P. Brilliant crimson, tinted scarlet. A thoroughly fine rose. Has large, finely formed, fragrant flowers; blooms well and is healthy and vigorous.

Hansa. H. R. Deep pink very double. Absolutely hardy and requires no winter protection.

Jubilee. H. P. Deep crimson, shaded maroon; almost black. Buds pointed.

Lady Gay. C. Cherry pink, fading to soft white; the flowers in large loose trusses, together with the buds and foliage, form a mass of beauty from base of vine to tips of branches; a perfectly hardy climber.

La France. H. T. Beautiful bright silvery pink with pale lilac shading. Flowers large and borne freely. Delightfully fragrant, excelling nearly all others in this respect. One of the great favorites.

Mad. George Bruant. H. R. Flowers large size, semi-double, and produced with remarkable freedom in clusters of five; fragrant buds are beautifully formed, long and pointed. Color pure glistening white.

Margaret Dickson. H. P. A large and handsome white rose of extra vigorous growth. Its large petals are thick and shell shaped, tinted flesh next to center. Foliage is dark and thick.

Magna Charta. H. P. Extra large, full flowers, very double; of fine form and sweet; clear, rosy red, beautifully flushed with violet crimson; sure and profuse bloomer; long stems.

Madam Plantier. J. One of the hardiest June roses. An enormous bloomer and covered with snow white flowers every season without attention.

M. P. Wilder. H. P. Standard variety. Double red, very popular and very fine.

Memorial Rose or Wichuraiana. W. Pure shining white with bright golden center; single large blossoms profuse in July; glossy dark green leaves.

Moss Crested. M. Deep pink colored buds, surrounded by a mossy fringe and crest; free from mildew. A fragrant and very beautiful rose.

Moss. M. Red and white.

Mrs. John Laing. H. P. Pink, large, fine form, strong stems, fragrant. Profuse bloomer.



Crimson Rambler. (See page 53.)



Francois Levet.

ROSES—Continued.

Nova Zembla. H. R. Of the Rugosa type. Double white. Unusually large blossoms for this species.

Persian Yellow. J. Bright yellow. Small but quite double. Foliage faintly scented. Particularly interesting as being one of the parents of the wonderful Pernetiana class.



Mrs. John Laing.

Paul Neyron. H. P. Deep rose color, good tough foliage, wood rather smooth. A free bloomer. Very desirable as a garden rose.

Prairie Queen. C. Clear bright pink, sometimes striped. Flowers large, double and full; blooms in clusters.

Prince Camille de Rohan or La Rosiere. H. P. Color deep, velvety crimson passing to intense maroon and shaded black; large handsome and fragrant blooms; sometimes called the Black Rose.

Rugosa Rubra. H. R. Japanese variety. Flowers, single, of most beautiful bright rosy crimson; succeeded by large berries of a rich, rosy red color, and a great addition to the ornamental character of the plant. Makes a beautiful low hedge. We also carry a white flowered form of this variety.

Rambler, Crimson. C. Flowers are a bright, cheerful shade of crimson, and the great size of the clusters makes it especially attractive. The flowers are double, about the size of cherry blossoms. A rapid grower. Also comes in white, pink and yellow, but these are not as hardy as the crimson variety.

Rambler. C. Blue, pink, white, and yellow.

Sir Thomas Lipton. H. R. Flowers perfectly double, pure white. Fragrant. Strong and vigorous. The best double white rose in its class.

Seven Sisters. C. Blush, tinged and striped with various shades. One of the old fashioned favorites.

Trier. C. A strong growing climber of the Rambler type, with great trusses of pale rose colored flowers, changing to white. Blooms continuously all summer.

Ulrich Brunner. H. P. Brilliant cherry red, a very effective color; flowers of fine form and finish, carry well upon the plant. Petals of great substance; plants, vigorous, hardy, and resist mildew.

Hardy Climbing Vines

We list below the best and hardiest varieties in this class, such as by experience have been found most satisfactory in the Northern States.

Approximate blossoming season is represented by the months given in the description of those varieties, prominent for their flowers.

Aristolochia Sipho - Dutchman's Pipe

(B-C.) Leaves are frequently a foot in diameter and heart shaped, vine hardy. Should be planted on shady side of house. Climbs on trellises. Very effective on account of its foliage. Slight bloom.

Bittersweet - Celastrus

Climbing Bittersweet, False Bittersweet (C. scandens). (C.) A rapid growing, climbing shrub, with ornamental, light green foliage. The yellow flowers in June are followed by bright yellow and crimson fruits in the autumn. A very desirable plant for covering trees, rocks, rough walls, and trellis work.

Clematis - Virgin's Bower

Henryi. (C.) A robust plant and a free bloomer. Flowers creamy white. Large flowered variety.

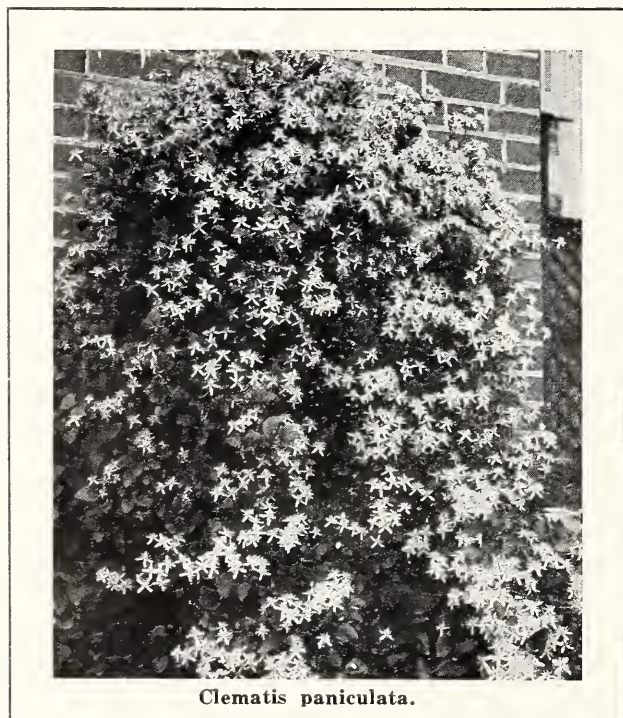
Jackmani. (C.) Flowers are large, intense violet purple. Remarkable for its velvety richness. It is a free grower and an abundant bloomer. The sepals have a ribbed bar down the center; broad central tuft of pale green stamens.

Madam Edward Andre. (C.) Flowers a beautiful, bright, velvety red.

C. paniculata. (B.) July and September. It is a very rapid climber, and desirable wherever a strong and rapid growing vine is needed, on walls, verandas, fences, etc. In late summer it produces dense sheets of medium size, pure white flowers, star shaped.

C. Viorna var. coccinea. (C.) Beautiful flowers and much used. Has been crossed with other hardier Clematises and desirable varieties have resulted.

C. Virginiana (Virgin's Bower, American White Clematis). (B.) August. Always a popular, hardy, climbing vine. It is a native of the Northwest and succeeds everywhere. Grows to a height of 20 ft., and sometimes more. In August produces an immense profusion of white, feathery flowers.



Clematis paniculata.



Engelman's Ivy.

C. Vitacella. (C.) This is one of the oldest and best types of the Clematis that have been introduced into this country. It forms one of the leading groups of the garden Clematises, and is one of the parents of the Jackmani type of hybrids. It bears a profusion of medium sized flowers of a wine-red color. June and August.

Chinese Matrimony Vine - Lycium

L. Chinense. (C.) May. This is a medium sized creeper or trailer, attaining a maximum height of 12 ft. The foliage is of a grayish green. The flowers which appear from June to September vary through shades of pink to purple. The fruit which follows is of a deep crimson and very showy. It is borne abundantly along the entire length of the branches. The foliage remains fresh until severe frosts.

Honeysuckle - Lonicera

Hall's Evergreen Honeysuckle (var. Halleana). (C.) One of the best and free bloomer. Has oval, semi-evergreen foliage and fragrant yellow and cream colored flowers in constant succession. Fine for covering trellises, rocks, dry banks, etc.

Trumpet Honeysuckle (L. sempervirens). (C.) One of the best climbers of the class. It is a vigorous grower, with glabrous foliage. Flowers trumpet shaped, 1½ to 2 inches in length; in color they are scarlet or orange scarlet.

var. flava. A type with yellow flowers.

Solanum - Nightshade

German Bittersweet (S. dulcamara). (C.) It is a rapid grower, of clinging habit, and with beautiful, dark green foliage. During the summer it is covered with violet-purple blossoms and bright green fruits which turn to a brilliant scarlet. The vine is thus covered with the flowers, the green fruit and the scarlet, all summer. Fruit not edible.

Woodbine - Ampelopsis

Virginia Creeper or Common Woodbine (A. quinquefolia). (A.) Flowers inconspicuous. The splendid Ivy found in our Northern woods which is well known for its beautiful autumnal colors.

Engelman's Woodbine (var. Engelmanni). (B.) A type of quinquefolia which has long been desired. It has shorter joints and very much smaller and thicker foliage. It also is better equipped with tendrils by which it will climb walls of stone or brick. This variety has proved itself perfectly hardy in Minnesota.

Bellflower or Harebell—*Campanula Carpatica*.

Hardy Herbaceous Perennials

List of Selected Varieties Suitable for Lawn Planting in the Northwestern States.

No ornamental lawn planting, whatever its extent, can be complete without a liberal proportion of these hardy flowering plants. The ease with which they are maintained is an important factor, but their great and varied scope of usefulness gives them still greater importance. Not only do they enter into every important feature of the landscape, but by a judicious selection they at the same time yield a profusion of bloom for indoor decoration through six months of the year. In height they range from six to eight or more feet thus offering proper graduation for mass groups and wide selection for specific purposes. Any of the perennials listed can be grown anywhere but should be heavily covered during the winter in "A" and "B" territory.

Achillea - Milfoil or Yarrow

Of easiest culture and very valuable for borders and rock work, or in situations refused by more tender plants. Make good carpets in dry places.

A. Ptarmica var. **The Pearl**. Stiff upright stems. Admirable for cutting. One of the very hardiest and best border plants for exposed locations.

Artemisia - Wormwood

Silky Wormwood (*A. frigida*). 1 ft. September. One of the most beautiful of the genus, with finely-cut foliage. Will thrive in poorest soil.

Columbine—*Aquilegia*.

Aster - Starwort, Michaelmas Daisy

New England Aster (*A. Novae Angliae*). 4 to 5 ft. September-October. Large heads of clear, deep purple flowers with bright yellow centers. One of the most conspicuous.

A. Novae-Belgica var. **Lady Trevellyn**. 3 ft. September-October. A form giving large heads of pure white flowers with yellow centers. The panicles are often 15 to 18 inches long.

A. Robert Parker. 4 ft. September-October. Lavender. The flowers are produced in large sprays, and it is one of the most satisfactory.

Aquilegia - Columbine

Golden Spurred Columbine (*A. Chrysantha*). 3 ft. July-August. Bright golden flowers with long, thread-like spurs. An elegant border plant.

Rocky Mt. Columbine (*A. caerulea*). 1 ft. July-August. Very large flowers, often four inches across with deep blue sepals and pure white petals and four long recurved spurs. A fine species for the border or base of rockery in well drained loam.

Bellflower, Harebell - Campanula

A most important class of hardy plants for the perennial border or garden. They are of very easy culture, growing either in sunny or shady positions.

Bearded Harebell (*C. barbata*). 1 ft. June-July. Long, tubular, light blue flowers in clusters.

Carpathian Harebell (*C. Carpathica*). 9 in. June-September. Of dwarf, compact habit. Flowers deep blue, on good stems for cutting and borne in continuous succession.

var. **alba**. Pure white flowers. Very effective.

C. grandiflora. (See under head of *Platycodon*.)

Canterbury Bell (*C. media*). An ornamental garden flower of easy culture. The flowers vary in color between blue, red, purple, and white.



Iris.



Larkspur.



Peony.

PERENNIALS—Continued.

Bleeding Heart - Dielytra, Dicentra

Bleeding Heart or Seal Flower (*D. spectabilis*). 3 ft. June. Long racemes of showy, heart-shaped, red and white flowers. By far the handsomest of its tribe, and will grow both in shady or sunny locations, but blooms more freely when given plenty of sun.

Boltonia - False Chamomile

A class much resembling the Asters, yet giving a far different effect. Of easy culture and a fine addition to the autumn list.

B. asteroides. 3 ft. September. Pure white flowers.

B. latisquama. 4 ft. September-October. The flowers are pink, slightly tinged with lavender. Produced in immense heads bearing hundreds of blossoms.

Buttercup - Ranunculus

Bachelor's Button (*R. acris* var. *flore plena*). 2 ft. May-June. Showy, very double, deep glossy, golden yellow flowers and handsomely cut foliage.

Chinese Bellflower - Platycodon

P. grandiflora. 2 ft. July-September. A veritable giant Harebell, forming a dense, branched bush of upright habit with attractive foliage and from July until September bearing a constant succession of conspicuous, bell-shaped flowers varying in color from pure white to deepest blue. Has also been called "balloon flower" owing to the peculiar formation of the bud.

Coreopsis - Tickseed

C. grandiflora. 3 ft. June-October. America. Large, deep yellow, cup shaped flowers, each on a long clean stem, making it especially valuable for cutting purposes. A continuous bloomer during its season.



Tickseed—Coreopsis.

Day Lily - Hemerocallis

These are excellent plants with grass-like foliage and dark orange colored flowers borne in panicles on long stems. They are exceptionally hardy, thriving in any good soil and are especially adapted to moist and shady places.

Yellow Day Lily (*H. flava*). 2 ft. June-July. Bright yellow flowers. Very fragrant.

Tawny Day Lily (*H. fulva*). 2½ ft. July-August. Flowers deep tawny yellow.

Double Orange Lily (var. *Kwanso*). 2½ ft. July-August. Flowers orange yellow, shade copper.

Feverfew - Pyrethrum

P. roseum. 12 to 18 in. June-September. These showy plants produce flowers in a large variety of shades, the hybridizing having resulted in colors ranging from white, white with yellow center, yellow and lilac to rose, carmine and crimson. They are extremely desirable for cut flowers, easy to grow, and if cut down after flowering in June, they will bloom freely again in September.

Great Ox-Eye or Giant Daisy (*P. uliginosum*). 4 to 5 ft. August-October. Borne in dense bushes four or five feet in height, terminated by loose clusters of pure white flowers with bright yellow centers. The individual flowers are often four or five inches across, and each borne on a good, stiff stem for cutting.

Forget-me-not - Myosotis

This well known genus of plants scarcely needs description. They thrive in moist, half shady places and will also grow to good advantage in the border.



Bellflower—Platycodon.

Foxglove—*Digitalis*.**PERENNIALS—Continued.****Foxglove - *Digitalis***

A small and showy genus of perennial plants of easy culture. They prefer a rich, loamy soil and partial shade. Certain species used in medicine.

Common Foxglove, Fairy Fingers or Witch's Fingers (*D. purpurea*). 4 to 5 ft. July. This variety is not grown in separate colors, but generally produces flowers which range in color from white, creamy white, rose and pink to purplish-red.

Gaillardia - Blanket Flower

Amongst hardy perennial plants, Gaillardias are conspicuous for profusion and duration of bloom. The striking flowers produce a gorgeous effect in the border, and are highly recommended for cut-flower purposes, lasting a long time in water, and being gathered with ample, self-supporting stems.

G. aristata var. **grandiflora**. 1 ft. June-September. The flowers are often three inches in diameter and borne on good stout stems for cutting. The markings of the individual flowers differ widely, being in all shades of deep orange-yellow marked with a well defined, broad band of deep maroon and with a dark maroon center.

Golden Glow, Cone Flower - *Rudbeckia*

One of the most attractive of the autumn-flowering perennials for the mixed border and for massing.

Giant Purple Cone Flower (*R. purpurea*). 4 ft. June-October. An entirely distinct variety of medium growth. Bears very large, reddish purple flowers on good stems.

Golden Glow (*R. laciniata*). 6 ft. July-September. Very large, double, dahlia-like flowers of a brilliant, golden yellow color. These are borne in great masses surmounting the bush and making it an extremely showy plant.

Hibiscus - Mallow

A very showy plant in any position but succeeds especially well in damp places. Very large, single, hollyhock-like flowers produced during the entire summer. About 5 feet.

H. militaris. 5 ft. August. A very tall species with flesh-pink flowers, tinged with deeper color toward center.

var. Crimson Eye. One of the showiest of herbaceous plants and one of the finest for massing. Flowers white with crimson center. Single. Very large and striking, often measuring five inches in diameter.

Hollyhock - *Althea*

Indispensable plants in the garden or border, possessing a character peculiar to themselves which renders them especially valuable to break up any set effect in lawn planting. Can furnish the most desirable colors in both single and double forms.

Hollyhocks, Double (*Althea*). Blooms June to August. Height 4 to 5 feet. Colors mixed. Hollyhocks are undoubtedly among the most ornamental and handsome garden flowers, with their tall spikes dotted with large, double flowers of the most lovely shades of color.

Iris - Rainbow Flower, *Fleur de Luce*, *Fleur de Lis*

No flower in the perennial border surpasses the Iris in delicacy of texture and color, or is more showy and pleasing in general appearance. They rival the Orchids of the tropics in their surpassing beauty. They thrive in almost any soil and are of the easiest culture. Planted in the open border, beside brooks and ponds, or planted in the wild garden they do equally well. The flowers are borne on long stems which bring them well up above their own foliage and that of other plants when grown in borders and beds.

Augustina. Deep yellow and maroon.

Pearl. Large white; very handsome.

Parisiensis. Large, showy; deep purple.

Emperor. Large handsome purple.

Stenophylla. Blue and white.

Warsla. Large, solid purple. Exquisite dignity.



Hollyhock.

PERENNIALS—Continued.

Larkspur - Delphinium

Well known and valuable perennial plants with ornamental foliage. They are all free-flowering and of easy culture. The tall growing sorts are admirable for the back portion of the border and for grouping among shrubs. By preventing the flowers from going to seed, the plants will bloom continually until hard frosts.

D. Chinensis. 3 ft. July-October. Very large open panicles of handsome flowers, varying from deepest blue through all lighter shades to pure white and deep lavender.

var. alba. A pure white form of the above.

D. Formosum. 4 ft. June to September. Large, deep blue flowers with pure white eyes, and in showy, long spikes. One of the choicest.

Lily - Lilium

Tiger Lily (L. tigrinum). 3 to 4 ft. July-August. Bright red, marked with large purplish spots. A well known old garden plant which is always popular for certain effects.

Lily-of-the-Valley - Convallaria

C. majalis. 6 in. May-June. The Lily of the Valley is too well known to need description. Its spikes of pure white flowers and charming fragrance have made it a favorite for many centuries.

Plantain Lily - Funkia

F. caerulea. 1 ft. June-July. Flowers, light blue; glossy foliage. Flowers borne on tall showy spikes.

Corfu Lily (F. grandiflora). 18 in. August-October. Heart-shaped, light green foliage and clusters of fragrant, pure white flowers in constant succession.



Lily of the Valley.

Peony - Peonia

Peonies succeed admirably in any loamy soil and may be made to thrive in the shady parts of the lawn where other flowering plants refuse to bloom. For bordering walks and driveways and for the flower garden, an assortment of Peonies is quite indispensable. Our list includes some of the choicest varieties that have been tested on our grounds. By making proper selection, the blooming period may be extended in many locations from the middle of May to the end of June. They offer a range of color from pure white to deep purple, and many of them are fragrant.

Note: The nomenclature of the Peony is in a more or less chaotic state owing to the vast number of seedlings and hybrids brought out in the past few years. Our list comprises the cream of the hundreds of varieties we have tested in our trial gardens. The very finest colors and largest blooms are among them. A longer list would only make a selection confusing to the buyer.

Artemise. A fine rose pink. Double row of outside petals; center pompon of same color; center slightly raised. Strong grower; free bloomer. A very solid color.

Delachii. Purplish crimson, shaded violet.

Dorchester. Late free bloomer. Delicate salmon flesh color; excellent for all purposes.

Delicatissima. A shade darker than Artemise. Outside petals blend in with the pompon. Strong grower; free bloomer. Another fine pink.

Duc de Wellington. Single row of outside petals flesh color. Center, narrow petals straw color. Outside ones of these being same as outer petals. Fades to pure white. Strong grower; profuse bloomer, every shoot bearing a flower. One of the best white.

Dorchester. Pink, fine.

Chas. Verdier. Deep red.

Felix Crousse. Brilliant red.



Dorchester Peony.



Showing the Effectiveness of Peonies for Bordering.

PERENNIALS—Continued.

Festiva Maxima. Large, very double; pure white. Center petals fringed with red. Long stems. Strong grower; medium bloomer.

Grandiflora Rubra. Large, blood red.

Jean d'Arc. Flower in three sections. Single row of outside petals flesh pink. Next, very double section of fringed narrow straw colored petals. Inside of this a raised center of almost white petals, these being large, with crimped edges. A distinct flower. General appearance classes it as a very light pink but fades to white when fully open in the sun. Medium strong grower; free bloomer.

Golden Harvest. Soft pink guard petals, clear yellow collar, with a tuft of creamy blush petals tipped red in the center. A very beautiful variety, very free bloomer, fragrant; medium early. Similar to Jeanne d'Arc, but more dwarf.

Humei Alba. Large, compact, globular rose type. Color is light pink, with silver tips. Has a cinnamon fragrance. The stem is rather weak. Season very late.

Modeste. Deep rose, bright, showy, fragrant. Large, full, globular flowers.

Rubra. Common red Peony.

Rubra Superba. Rich purplish crimson. Grand globe-shaped flowers; very late. One of the finest reds in cultivation. Blooms are fragrant.

Single White. White.

Triumph du Nord. Solid color of rose pink; in bud looks quite dark but opens up lighter. A double outside row of single petals, pompon petals wide, somewhat crimped at end. When open, edges of petals are white shading down to rose pink toward the center. Finely scented. Vigorous grower. Free bloomer.

Prince de Talindyke. Dark red; very double. Double row of outside petals. Large cluster of bright yellow stamens. These are not conspicuous however. Strong grower, free bloomer.

Ville de Nancy. Large, medium compact flowers. Deep pink with silvery reflex. Tall, very strong stiff stem, free bloomer. Late. Extra fine.

Platycodon

See Chinese Bellflower.

Poppy - Papaver

Iceland Poppy (*P. nudicaule*). 1 ft. June-October. Colors from pure white and yellow to deepest orange scarlet. The flowers are borne on slender stalks well above the foliage and they are fine for cutting purposes.

Oriental Poppy (*P. orientale*). 2 ft. June. Has large thistle-like leaves about a foot long, clothed with white bristly hairs. Its deep orange scarlet flowers have a dark purple spot at the base of each petal. They are of exceptional size, frequently measuring six inches across.



Oriental Poppy.

PERENNIALS—Continued.

Phlox - Hardy Perennial Varieties

Ground or Moss Pink (*P. subulata*). 4 in. May. Rose colored flowers. As a cover plant and for rockery work, we know of nothing that excels this. The foliage, handsome and moss-like, makes a close carpet of green and when in flower the plants form a sheet of color.

Hybrid Phlox

Bridesmaid. Pure white, with crimson eye.
Champignot. Bright rose color.
Coquelicot. Orange scarlet, carmine eye.
Esias Tegner. Deep rose.
Elizabeth Campbell. Light pink, white center.
Gen. Von Hentz. Scarlet, with rose shadings and crimson red eye.
Jeanne de Arc. Pure white.
Mrs. Jenkins. Pure white; very fine.
Miss Lingard. Pure white; lavender eye. Early.
Michael Buchner. Dark purple.
Madam Muret. Flame color, carmine center.
O. Wittig. Lavender, var. center.
Pantheon. Deep salmon rose.
Robinson. Salmon.
R. B. Struthers. Bright pink salmon.
Skeleton. White, with red eye.
Sieboldi. Orange scarlet.
Sunshine. Scarlet pink, var. center.
Subulata Alba, White; Subulata Rubra, Red.
 Dwarf, splendid for low borders.
Widor. Purple, white center.
Vesuvius. Red, purple eye.



Phlox—Miss Lingard.



Yucca—Adam's Needle.

Ribbon Grass - Arundinaria

Variegated Ribbon Grass (*A. folius variegata*). This is a strong and vigorous grower, the foliage attaining a height of 18 inches or more. The leaves are striped longitudinally with green and cream color. Valuable for all border purposes.

Shasta Daisy - Chrysanthemum

Shasta Daisy (*C. Leucanthemum hybridum*). Originated by Mr. Luther Burbank of California. The flowers are very large; color white with golden center. They are bold in effect and profusely borne on good stems for cutting.

Sweet William - Dianthus

Sweet William (*D. barbatus*). 18 in. June-July. Germany. An old flower garden favorite. It sports into endless varieties of color—white, pink, purple, crimson and scarlet, and many sorts variously edged, eyed or spotted.

Scotch Pink (*D. plumarius*). 9 in. June-July. This is strictly what is known as the hardy Grass Pink or Garden Pink. There are now many cultivated varieties of superior quality, nearly all with a decided carnation fragrance. The foliage is grass-like, very thick and makes a good border. The flowers are borne on good, clean stems. We carry the best varieties.

Yucca - Adam's Needle

Y. filamentosa. 3 to 4 ft. June-July. The best known species of Yucca and best adapted to the Northwest. Has stiff, broad, sword like foliage and surmounted by tall handsome spikes of large, fragrant creamy white flowers. Valuable in producing sub-tropical effect and a group of them upon the lawn commands instant attention when the monstrous heads of flowers are open.

Dahlias

Well known autumn-flowering plants, growing from two to five feet high, and producing a profusion of flowers of the most perfect and beautiful form, varying in color from the purest white to the darkest maroon. The Dahlia is not as particular as most of our flowers, and will succeed under a great many adverse conditions. An open, sunny location seems to favor them at all times. Dahlias will grow and do equally well in any kind of soil, as far as the number of flowers is concerned, the only difference being that in sand and gravel they form a short, sturdy, compact plant, and in heavy loam and lowland they grow tall and rank, blossoming about a week later than those planted at the same time in sandy soil.

Cactus Dahlias

This type of Dahlia is characterized by long, narrow, pointed and twisted petals, giving the layered flower a very striking appearance.

Countess of Lonsdale. Pleasing blending of salmon-pink and amber. Free-blooming.

Flora. A true white; large flowers on strong stems.

Floradora. Blood-red; a remarkably free bloomer.

Kriemhilde. Brilliant pink, shading to white.

Standard Bearer. Rich scarlet; free bloomer.

Show Dahlias

The following have the large, round, full-flowered characteristics of the Show class. They are either solid colors, edged or tipped lighter or darker.

A. D. Livoni. Fine clear pink; free-flowering and perfect form.

Grand Duke Alexis. Ivory-white; large, massive flower, tinted rose.

Queen of the Yellows. Clear primrose-yellow; of fine form.

Red Hussar. Brilliant cardinal-red; perfect form.

Decorative Dahlias

This class comprises those that depart from the formal rounded type of the Show class, but do not have the twisted petals of the Cactus type.

C. W. Bruton. Bright yellow; one of the best.

Jack Rose. Brilliant crimson-red.

Sylvia. Soft pink center, shading to white; fine for cutting.

Wm. Agnew. A rich, dazzling carmine-red.



Gaillardia—Blanket Flower. (See page 58.)

New Century Single Dahlias

These are of the free-branching habit, flowering early and profusely throughout the season. Flowers 4 to 6 inches across, on long stems.

Pink Century. Delicate, soft pink.

Scarlet Century. Brilliant scarlet.

Twentieth Century. Rosy crimson, the flowers change lighter as the season advances.

New and Rare Gladioli

Grow some Gladioli for cut flowers. The blooms often last for two weeks, the buds unfolding clear to the tip of the spike. Pull off the lowest blossoms as they wilt.

America. Flesh-pink. Flowers immense, borne on strong spike.

Augusta. White with lavender anthers. Strong spike.

Mrs. Francis King. (The original.) Beautiful "Besnard Shade" flame-pink. Immense flowers on spike 4 feet high.

Panama. Has created a sensation on account of its large wide-open wax-like flowers of glowing mauve-rose.

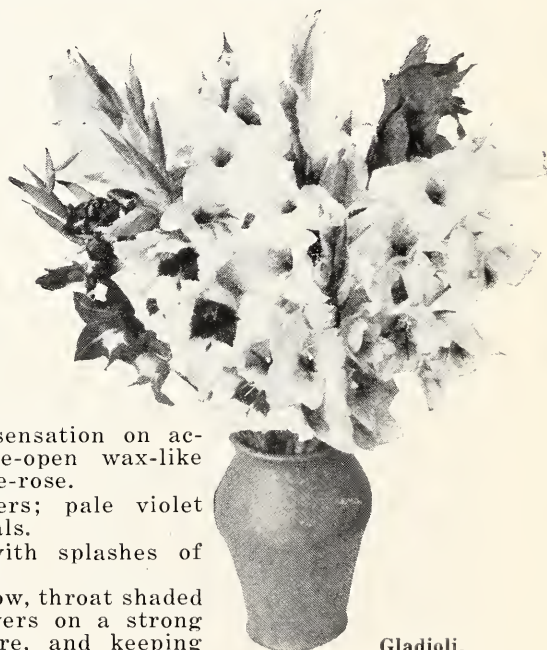
Peace. Large white flowers; pale violet feathering on lower petals.

Chicago White. White with splashes of lavender.

Niagara. Light crocus-yellow, throat shaded deeper. Large open flowers on a strong spike. For color, texture, and keeping qualities this is one of the best.



Decorative Dahlia.



Gladioli.



Bed of Geraniums, Cannas, Castor Beans, Fountain Grass, and Coleus.

Bedding Plants

- ACHYRANTHUS.** Red and white leaves. 2½ inch pots.
- AGERATUM.** Blue perfection. Bright blue. 3½ inch pots.
- ALTERNANTHERA.** Dainty foliage plant for carpet bedding. 2½ inch pots.
- ALYSSUM.** Little Gem. Dwarf; for edging. 2½ inch pots.
- ASTERS.** Separate colors. One of the most popular flowering plants. Strong seedlings.
- BEGONIA—Rex.** Begonias are invaluable for house culture. They make excellent plants for baskets or vases. 4 inch pots.
- CASTOR BEANS.** 4 inch pots.
- CANNAS—King Humbert.** 4 feet. Bronze foliage with brownish stripes, large, thick and leathery. Flowers large; bright orange-scarlet, streaked with crimson.
- Meteor—5 feet.** Green foliage. One of the most brilliant Cannas, of a rich, glowing, deep crimson. Each plant produces five or six trusses of bloom, which flower constantly all summer.
- Gladiator.** 5 feet. Green foliage. Flowers intense yellow, spotted with bright red.
- Queen Charlotte.** Green foliage. Variegated flower, red and yellow.
- Musifolia.** Green foliage. No flower.
- COBAEA SCANDENS.** (Cup-and-Saucer Vine.) Rapid growing climber. 3½ inch pots.
- COLEUS.** Separate or mixed colors. 2½ inch pots.
- COSMOS.** Early Dawn. Large flowering; very early; lavender. 3 inch pots.
- DRACENA.** Good for center of beds or vases. 5 inch pots.
- FEVERFEW.** Double, white flowers. 4 inch pots.
- GERANIUMS—S. A. Nutt.** Red. 5 inch pots.
Bertha Presley. Pink. 5 inch pots.
Mad. Buchner. White. 5 inch pots.
Beauty Poitevine. Salmon. 5 inch pots.
- HELIOTROPE.** Small, fragrant, flowers in clusters. Blue and white. 4 inch pot.
- LOBELIA.** Small, deep blue flowers. 2½ inch pot.
- MARGUERITE DAISY.** Standard sorts, white and yellow. 4 inch pot.
Mrs. F. Sanders. Double, pure white. 3 inches in diameter.
- NASTURTIUM.** Dwarf mixed and tall mixed. 2½ inch pots. 4 inch pots.
- PELARGONIUM.** (Lady Washington Geranium.) 4 inch pots.
- PETUNIAS—Single.** 3½ inch pots.
Single. Large-flowering, fringed. 4 inch pots.
Double. Fine sorts. 4 inch pots.
- PHLOX DRUMMONDI.**
- RICINUS.** (Castor Bean.) This plant has enormous leaves. 4 inch pots.
- SALVIA—Bonfire.** (Scarlet Sage.) Effective for bedding. 4 inch pots.
- VERBENAS—Assorted Colors.** Free bloomer. 2½ inch pots.
- VINCA, Variegated.** For vases or for trailing over the edge of window boxes.
- VINCA—Green.** 4 inch pots.
- ZINNIAS.** Popular summer-flowering annuals. 3 inch pots.



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